Standard Operating Procedure

The operating procedure set out below must comply with the Data Quality Principles set out within Trust Data Quality Policy

Title:	**ENDOSCOPIC EVALUATION OF THE LARYNX (EEL)**
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Author	Kate Young Advanced Practitioner SLT	**July 2024**
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Contents

1. Introduction

The Royal College of Speech and Language Therapists (RCSLT) recognise that Endoscopic Evaluation of the Larynx (EEL) is within the scope of practice for SLT's specialising in voice disorders. EEL procedures:

- contribute to the diagnostic process
- provide information about the function and status of the larynx and/or vocal tract before, during and after treatment

This practice (or direct access to it) is considered essential for a SLT (voice disorders) service. EEL is one important aspect of SLT assessment and management of patients with voice disorders. It should not be used in isolation but in conjunction with tools such as perceptual and objective voice quality evaluation, patient-reported outcome measures (PROMs) and detailed case history taking.

SLT's should only perform EEL where there is a multidisciplinary voice disorders service and University Hospitals of Derby and Burton NHS Foundation Trust (UHDB) meets this requirement with established access to a Laryngologist (specialist ENT surgeon in voice and laryngeal disorders). SLTs should perform EEL only with full support of Laryngology colleagues and using an agreed protocol to access opinion and/ or medical assistance from a specialist Laryngologist.

2. Purpose

This document describes procedures to support adherence to the RCSLT Position Paper: Speech and Language Therapy Endoscopic Evaluation of the Larynx (EEL), 2020. The SLT Department offers EEL clinics for different adult patient populations with varying scopes of practice.

The objective of the SOP is to:

- ensure a safe and consistent delivery of the EEL service
- safeguard patient and staff safety
- provide a framework for service audit

3. Scope

TYPES OF EEL CLINIC AT UHDB

Joint Voice Clinic (ENT SLT room 1)

This clinic aims to:

- provide patients with a multidisciplinary approach to evaluation and managing a clinical voice disorder.

The patients' problems often require the expertise of both Laryngologist and SLT (voice) in diagnosis and management. Other professionals such as Health Psychology or a Singing Teacher may be part of the extended team.

Parallel SLT-led Clinic (ENT SLT room 1)

This model uses strict selection criteria to identify patients most likely to require voice therapy as their primary mode of treatment. These clinics aim to:

- reduce the number of hospital visits
- enable the patient to be seen by the voice specialist who is most likely to manage their voice problem

This SLT-led clinic runs 'in parallel' to the Joint Voice Clinic. This facilitates ease of patient transfer to the Laryngologist should the consultation require it. The SLT is the first point of contact with the patient from the referrer. Patients are triaged into the Parallel SLT-led Clinic by ENT following a local triage process (Appendix A). This clinic only operates when there is a Consultant Laryngologist running a parallel clinic e.g., Joint Voice Clinic or ENT Clinic. Diagnostic decisions are made jointly with the Laryngologist following review of the laryngeal image and case discussion of pertinent assessment findings. SLT's should practice within the RCSLT Duty of Care Guidelines (RCSLT, 2020) and HCPC Standards of Proficiency (HCPC, 2020). This model requires SLT Advanced Clinical Practice (ACP), which the AP SLT role fulfils, and a philosophy of team working which is integral to a well-developed voice disorders service.

Voice Therapy Clinic (ENT SLT rooms 1)

Patients who have already had an ENT or AP SLT laryngeal examination and who are referred to voice therapy may also undergo additional EEL assessments by an SLT (voice disorders).

The aim of this clinic is to assist the SLT management of a voice-disordered patient. Patients may undergo an endoscopic assessment performed by an appropriately skilled specialist voice SLT in this clinic for reasons including:

- additional voice therapy opinion and assessment
- detailed understanding of the biomechanics of voice production
- trials to ascertain appropriate therapy intervention (under endoscopy),
- therapy trials to improve patient treatment compliance
- patient biofeedback (simultaneous or recorded)
- obtain pre-and post-outcome measures following therapy/surgery (in conjunction with other tools).

If, during the assessment procedure, the SLT becomes aware of any anatomical or physiological abnormality not already mentioned in the referral, the opinion of the Laryngologist should be requested on the same day (as per 9.1).

4. Abbreviations and Definitions

EEL is defined as an examination of laryngeal anatomy and physiology using endoscopic equipment, either a rigid endoscope introduced via the mouth, or a flexible endoscope introduced via the nose. Flexible endoscopes will be used at UHDB. Flexible endoscopy assesses the entire vocal tract during a range of phonatory and non-phonatory activities. Examination with a stroboscopic light source provides information about vocal fold vibratory patterns.

SLT	*Speech and Language Therapy/Therapist*
ENT	*Ear Nose and Throat*

5. Responsibilities

ROLES AND RESPONSIBILITIES

Joint Voice Clinic (ENT SLT room 1)

Roles	**Responsibilities**
ENT	Over-all clinical responsibility Triage of referrals Joint reporting
AP SLT	Responsible for general organisation of the EEL service, audit, and service review. Joint reporting with ENT of EEL findings Covid-19 risk assessment Clinic set-up and break-down, clean scope and record patient

	details in audit book, monitor and order consumables and stock. Chaperone clinics.
SLT EEL	Joint reporting with ENT of EEL findings Supports patient, AP SLT
Treating SLT	Refers the patient to Joint Voice Clinic Completes relevant pre and post EEL assessment and outcome measures including patient reported outcome measure Actively manages the patient May be the same / different to SLT EEL Communicates findings of report to patient as required
Nurse	Clean and return scopes before during and after clinic

SLT-Led Parallel Clinic (ENT SLT room 1)

Roles	**Responsibilities**
ENT	Over-all clinical responsibility Triage referrals Understanding patients discussed by AP with ENT and verification of AP SLT findings and management plan
AP SLT	Responsible for general organisation of the EEL service, audit and service review. First point of contact with the patient from referrer Leads an individual clinic session Reports joint diagnostic findings with ENT
SLT	Supports patient and AP SLT Covid-19 risk assessment Takes written consent as necessary Supports patient pre/peri/post EEL Checks EEL equipment and endoscope are fully functioning and contact DP Medical for service and inform AP SLT

	Access to lubricating gel Clinic set-up and breakdown Clean scope and record patient details in audit book Monitor stock levels and order consumables

EEL Therapy Clinic (ENT SLT room 1)

Roles	**Responsibilities**
AP SLT	Responsible for general organisation of the EEL service, audit and service review. Triages referrals Flag new pathology to ENT on day of procedure for ENT review or reassurance as appropriate Oversee SLT EEL triage and decision-making and audit Leads EEL session as endoscopist / assessor Verification of SLT EEL findings Reports joint findings
SLT EEL	Leads EEL session with AP as endoscopist / assessor Flag new pathology to ENT on day of procedure for ENT review or reassurance as appropriate Verifies findings with AP SLT Reports joint findings Supports AP & SLT EEL Covid-19 risk assessment Takes written consent as necessary Supports patient pre/peri/post EEL Checks EEL equipment and endoscope are fully functioning and contact DP Medical for service and inform AP SLT and SLT EEL. Access to lubricating gel, topical anaesthesia Clinic set-up and breakdown Clean scope and record patient details in audit book Monitor stock levels and order consumables

Treating SLT	Refers the patient to EEL Therapy Clinic Actively manages the patient May be the same / different to EEL SLT Completes relevant pre and post EEL assessment and outcome measures including patient reported outcome measure Communicates findings of report to patient as required

6. Procedure

REFERRAL CRITERIA AND PROCESS

Referral

SLTs working in voice disorders will refer patients into an EEL clinic (Joint Voice Clinic / EEL Therapy Clinic) will refer patients by letter based on the referral criteria and indications for EEL below. Where a referring SLT will not be undertaking the EEL themselves, they should notify the SLT undertaking the EEL of the reason for referral.

Referral Criteria

- Can be safely positioned in a sitting or standing position
- Patient has consented to the referral
- Patient has undergone EEL by an ENT Doctor in the past (the exception is the Joint Voice Clinic and SLT-led Parallel Clinic where images will be reviewed by ENT colleagues).

EEL Indications

Specialist SLT's (voice disorders) may carry out laryngeal and vocal tract assessment via endoscopy to:

- identify and describe phonatory structures and their function
- identify the presence of and assess the effects of lesions, structural abnormalities, or alteration of function on phonation and speech
- assist in the interpretation of the above as part of the clinical discussion thereby contributing to the diagnostic process
- independently carry out the above within the boundaries of expertise as outlined in RCSLT Competency Framework
- provide feedback regarding vocal tract function as part of the therapeutic process.
- direct treatment and evaluation its effectiveness

- provide visual biofeedback during therapy
- improve patient, carer and healthcare professional understanding of the voice disorder and patient compliance with treatment
- record phonatory behaviour and laryngeal structures for future reference

EEL Risk and Contraindications

The suitability and safety of EEL should be assessed on an individual patient basis with careful consideration of the risks and benefits, paying particular attention to the need for medical assistance for high-risk patients.

EEL is a minimally invasive procedure which carries some risks to the patient and therefore needs to be performed in a safe environment, in an appropriate clinical setting with suitable equipment and appropriately trained personnel. EEL examinations where contraindications are present should only occur within the SLT competency al Level 3 (Expert EEL Practitioner) associated with training and management of specific patient populations as stipulated in RCSLT EEL (Level 3 –Section 6).

High risk and vulnerable patient populations

When considering EEL, the SLT must always consider possible contraindications and risks of the procedure. The rationale for proceeding with an 'at-risk' patient and the risks versus benefits should be documented in the patient record. Failure to do so may constitute a breach of acceptable professional conduct.

When considering EEL for high-risk and vulnerable patients, a discussion should occur with the medical / surgical team and AP SLT prior to the referral. The rationale for proceeding with an 'at-risk' patient and the risks versus benefits of the procedure should be documented in the patient record.

An ENT surgeon should be consulted with these patients prior to proceeding and the timing of EEL discussed if a decision is made to proceed. ENT should be present for the EEL as these patients present technical scoping challenges and risk of harm. It may be appropriate to consult Oral and Maxillofacial surgeons in certain cases.

Possible contraindications for EEL due to scoping risks include the following:

- skull base / facial surgery or fracture within the last six weeks
- facial / nasal trauma including recent surgery within the last six weeks
- sino-nasal and anterior skull base tumours / surgery
- nasopharyngeal stenosis
- craniofacial abnormalities
- major or life-threatening epistaxis within the last six weeks

- choanal atresia
- hereditary haemorrhagic telangiectasia

Proceed with caution with the following high-risk patients:

- limited pharyngeal / laryngeal space
- significant airway limitation due to large volume disease e.g. cancer
- severe movement disorder / agitation
- vasovagal history
- bleeding risks
- positioning limitations

The SLT should consult the appropriate physician prior to proceeding and request their presence if deemed necessary for safe practice.

EEL will currently NOT be carried out on patients with contraindications or described as falling within the high-risk category described above, or who:

- are medically unstable
- have low / variable consciousness
- have positioning problems that limit equipment set-up
- have difficulty co-operating with procedure
- display extreme distress at the prospect of the procedure
- have a requirement of invasive or non-invasive ventilation
- have symptoms of Covid-19

TRIAGE AND CLINIC BOOKING

Managing Referrals

Joint Voice Clinic Triage and Clinic Booking

Appendix A

SLT-led Parallel Clinic Triage and Clinic Booking

EEL Therapy Clinic Triage and Clinic Booking

The treating SLT will refer and input onto SystmOne for instrumental assessment for EEL. The patient will be added to the Awaiting Appointment Caseload. Triage and booking of the clinic is the responsibility of the AP SLT. AP SLT needs to ensure that two EEL competent SLTs will be available.

Triage: Maximum of 3 patients per clinic prioritised based on clinical	**AP SLT**

need. Once prioritised, appointments should be booked on SystmOne, documentation completed and treating SLT informed Lorenzo for outpatients	**Admin**

Booking the clinic: As soon as prioritisation is completed inform treating SLTs about planned EEL clinic or alternative plan.	**SLT EEL**
For outpatients, contact the patient by telephone to confirm attendance, followed up with a letter and patient information leaflet outlining clinic time and location	**Admin**

PATIENT ENVIRONMENT

Room set up and Equipment

EEL should be performed in an appropriate medical setting e.g., ENT/SLT outpatients, with specialist endoscopic imaging equipment and seating. Access to appropriately trained medical and nursing staff, decontamination and emergency/resuscitation equipment is essential. It should be performed in a multidisciplinary environment and always with team agreement about reasons for the endoscopic procedure.

EEL is an invasive procedure and therefore may be performed only in line with UHDB policies on invasive procedures, with suitably trained supporting healthcare professional present in the clinic room e.g., SLT, SLTA, Nurse. Scopes will be cleaned according to UHDB SOP and appropriately stored by ENT nurses in scope storage boxes.

There must be immediate access to other suitably qualified practitioners in case of unforeseen circumstances or emergency (e.g., tissue trauma, epistaxis, vasovagal episode). In common with other invasive procedures, arrangements are in place to ensure that the EEL procedure is safe for attending patients. Therefore, it is essential that there is immediate access to emergency trained personnel e.g., crash team and fully operational equipment.

Personal Protective Equipment (PPE)

Appropriate protective equipment should be used, in accordance with Public Health England and local guidance. Minimally during Covid-19 outbreak PPE should include FFP3 face masks, eye protection, apron, and gloves.

Positioning
Patients will sit upright in a suitable examination chair in SLT or ENT Outpatients. There will be adequate space around the patient for staff and the endoscope stack with access to an electrical socket.

THE EEL PROCEDURE

Flexible Nasendoscopy

The flexible laryngoscope is passed trans-nasally to the hypopharynx where the larynx and surrounding structures are viewed. The moveable tip is angled and rotated to view the full larynx. The scope tip is positioned slightly above the epiglottis but can be moved closer to the vocal folds for more detailed visualisation (necessary for stroboscopic light). Supra-glottic structures and velo-pharyngeal function are assessed by withdrawing the endoscope into the nasopharynx.

Laryngopharyngeal structure, function and posture are assessed during speech and non-speech tasks e.g., habitual speech behaviour, flexibility of pitch adjustments, adductor non-speech behaviour, resting state. Activities designed to elicit specific behaviours of interest or to attempt to change a laryngeal gesture may be added. If, during the assessment procedure, the SLT becomes aware of any anatomical or physiological abnormality not already mentioned in the referral, the opinion of ENT will be requested on the same day by email or in person. The relevant EEL procedural protocol will be carried out (Appendix B or C).

The professional undertaking this aspect of the EEL examination must be skilled in interpreting the image, understanding the physiology, and knowing the types of vocal manoeuvres that might elicit the desired changes in behaviour. Advantages of EEL are excellent images of the vocal folds and velopharyngeal structures during voicing, conversation and singing. Disadvantages of EEL include nasal discomfort and triggering the gag and swallow reflexes. In some instances, topical nasal anaesthesia may be administered in line with UHDB ENT Practice.

Stroboscopy

Superior stroboscopic views can be obtained using the high-density flexible video-nasendoscope. A microphone detects the voice signal, fundamental frequency extracted and is used to control the rate of triggering of the stroboscopic light. This allows the observation of the vibratory pattern of the vocal folds in apparent slow motion. The flexible scope is introduced, stroboscopic light setting enabled, and the patient asked to sustain phonation of the vowel /i/. Several pitch and loudness

samples are required because vocal fold vibratory behaviour varies under these conditions. (PROTOCOL)

EEL Complications

EEL is a safe procedure when performed by appropriately trained personnel in a safe environment. There are possible complications outlined below:

- *Patient discomfort*
  Although quite common, discomfort should be mild if the procedure is administered competently.
- *Epistaxis*
  Nose bleeds are unusual despite EEL being performed on many patients on anticoagulant medications
- *Vasovagal response*
  This is unusual and may be related to very high levels of anxiety. Exercise caution if the patient has a history of fainting.
- *Reflex syncope*
  Fainting can occur because of direct vigorous stimulation of the nasal/pharyngeal/laryngeal mucosa during endotracheal intubation. The type of stimulation occurring for EEL is much less forceful hence this complication is rare. However, caution must be exercised in patients with unstable cardiac conditions for whom reflex syncope would result in further risk
- *Allergy to topical anaesthesia*
- *Laryngospasm*
  This is unlikely if the nasendoscope is adequately distanced from the larynx
- *Gagging and/or vomiting*

Patient and Carer Information

Patients must be fully informed about the EEL procedure prior to the examination. Consideration should be given to providing information in accessible spoken, written and/or visual formats, including the nature, purpose, and likely effects of the examination. Patients will have received relevant Patient Information Leaflet (Appendix D, E, F).

Consent

Consent to a procedure is subject to legal requirements and may be subject to local variations in practice. In most NHS trusts/Health Boards, it is routine practice to obtain verbal consent prior to EEL rather than written consent. This is in line with UHDB ENT practice.

The treating SLT should support patients with communication and cognitive deficits to engage in discussion using appropriate support materials. If there are doubts as to the patient's capacity to consent to the procedure, the principles of the Mental Capacity Act should be followed, this may include a discussion with the team to make decision in the patient's best interests. The discussion and decision should be documented in

SystmOne and the healthcare record. The patient or team can decline the procedure and the reasons and possible risks should be documented, with any alternative plan.

Written consent will also be gained for storage and use of audio-visual materials as per UHDB Patient consent to use of Audio / Visual records.

Image Interpretation and Reporting

Interpretation should be done within a multidisciplinary clinical context, accounting for all aspects of the patient's presentation.

Image interpretation may be influenced by the following factors

- image quality (e.g., flaring / de-misting / use of disposable sheaths)
- type of endoscopic equipment used (i.e., rigid versus flexible endoscope)
- quality of the camera equipment
- skill / competency of the endoscopist
- single versus 'team' rating
- availability of slow-motion playback facility on recording equipment.
- Images should be recorded with simultaneous high quality audio input.

All staff who report EEL should be aware of reporting software and how to embed clinical photos. Technical issues must be reported and fixed prior to further clinics. If these issues persist and the EEL service is affected, this must be reported using the DATIX system.

Reports are to be completed and uploaded to SystmOne and CITO. Outpatient reports should be sent on the day of completion to the patient and relevant others (e.g., Consultant / GP).

TRAINING REQUIREMENTS

EEL is an invasive procedure with some risks to the patient. To perform EEL, SLT's must complete training which encompasses passing the flexible endoscope and interpretation of laryngo-pharyngeal anatomy/physiology and laryngopharyngeal gestures during speech.

RCSLT Endoscopy Competency Framework and Training log describes four levels of competency:

- Level 1 - training SLT
- Level 2A and Level 2B - developmental progressions
- Level 3 - expert practitioner

Each SLT is responsible for maintaining a log of learning and activity. Level 3 SLTs must be fully competent in Endoscopist and Assessor roles as they will act in both roles. Achieving both roles may be governed by training timelines or staffing constraints. Once competency is achieved, SLTs take individual professional responsibility for achieving and competency maintenance. SLTs will be subject to regular audit as per standard clinical governance procedures. SLT competencies will be monitored and reviewed according to local policy. Clinic type and SLT experience determines whether joint review of all images is necessary, subject to local agreement. Competency will be maintained through regular involvement in clinics, CPD and audit monitored by AP SLT. Opportunities for continuing professional development will be incorporated at annual appraisal.

The level of knowledge and skills required is dependent on the type of clinic in which the SLT is required to work. Training is currently provided by the Level 3 AP SLT Clinical Lead for Voice and Head & Neck who are responsible for directing learning, monitoring progress and signing off competencies.

HEALTH, SAFETY AND DATA PROTECTION

Care of substances hazardous to health and control of infection

All staff involved in EEL are responsible for full awareness of health and safety issues and adhere to national and local policies. This includes care and disposal of substances and consumables hazardous to health (COSHH) as advised by UHDB infection control policy. Staff will adhere to Universal Precautions (Blood Body and Fluid 1984) and UHDB policies on cleaning and swabbing of scopes and isolation precautions.

Topical anaesthesia

Topical anaesthetics (nasal and oropharynx) and nasal decongestants may be used only when patients are intolerant of scope insertion. Staff will know the indications, contra-indications and possible drug interactions with their use, dosage, and side-effects. SLTs administer topical anaesthesia and nasal decongestion under a Patient Group Directives: Lidocaine 10mg (10%) spray and 5% Lidocaine in 0.5% phenylephrine HCL spray.

Immediate life support, risk management and incident reporting

Staff will carry out annual basic life support and CPR training and know how to handle an emergency e.g., vaso-vagal response, epistaxis, and hyperventilation. Staff will know how to minimise possible risks of passing the endoscope and adverse reactions to topical anaesthesia / nasal decongestants. If an adverse reaction occurs, staff must follow UHDB incident reporting procedures.

AUDIT AND COMPLIANCE

Audits for compliance with key criteria from the EEL SOP will be completed regularly by AP SLT, this will include consent and Datix. Additional ad-hoc audits and service evaluations will be completed to evaluate clinical activity and impact. This may include service feedback from patients and other stakeholders to support service improvements.

If ongoing failure against the audit criteria is identified, an investigation will take place to determine whether this is a person / process issue. All individuals involved in any aspect of the EEL service are required to be familiar with the EEL SOP and fulfil their respective responsibilities. Any investigation will be carried out by the Head of Service.

7. Information Governance

Data security and protection

Storage and retrieval of images are subject to legal requirements as interpreted at UHDB. Whilst waiting for endoscopy stack to be networked centrally by UHDB IT, assessment data is stored on the endoscopy stack. Data is accessed for reporting or supervision purposes.

8. References and Associated/Linked Documents

Jones SM, Awad R, Esposito K, Shaw J, Slade S, Stewart C, Young K. *Speech and Language Therapy Endoscopic Evaluation of the Larynx for Clinical Voice Disorders.* London: Royal College of Speech and Language Therapists (RCSLT) position paper, 2020 https://www.rcslt.org/wp-content/uploads/media/docs/clinical-guidance/RCSLT_Endoscopy-position-paper.pdf?la=en&hash=103BE5E2D331AB5699524FBF9BC885BE7127B13E

Speech and language therapist-led endoscopic procedures: considerations for all patients during the COVID-19 pandemic, RCSLT Guidance https://www.rcslt.org/wp-content/uploads/2020/11/RCSLT_COVID-19_SLT-led_endoscopic_procedure_guidance_April21.pdf

Duty of Care Guidelines (RCSLT) https://www.rcslt.org/members/delivering-quality-services/duty-of-care/duty-of-care-guidance/

Standards of Proficiency (HCPC). https://www.hcpc-uk.org/resources/standards/standards-of-proficiency-speech-and-language-therapists/

RCSLT Endoscopy competency framework and training log https://www.rcslt.org/members/clinical-guidance/voice/voice-guidance/endoscopic-evaluation-of-the-larynx/#section-2

UHDB Patient Group Directives: Lidocaine 10mg (10%) spray and

5% Lidocaine in 0.5% phenylephrine HCL spray. ** (APPENDIX)

UHDB Patient Consent to use Audio or Visual Records (ENT and SLT)

9. Appendices

APPENDICES

- A: ENT Triage
- B: EEL Proforma (Standard)
- C: EEL Proforma (Singers)
- D: PIL Joint Voice Clinic
- E: PIL SLT-led Parallel Clinic
- F: PIL EEL Aphasia Friendly

~~G: Report template~~

Appendix A: ENT Triage

All ENT Consultants and Registrars will triage referrals into the Joint Voice Clinic and 2ww SLT-led Parallel Clinic at point of referral.

The main referral source will be:

GP 2 week wait and routine referrals for constant or intermittent dysphonia with no red flags.

Red flags are described here http://www.orlhealth.com/risk-calculator-2.html.

Online risk calculator:
Tikka, T., Kavanagh, K., Lowit, A., Jiafeng, P., Burns, H., Nixon, I. J., MacKenzie, K. (2020). Head and neck cancer risk calculator (HaNC-RC)—V.2. Adjustments and addition of symptoms and social history factors. *Clinical Otolaryngology*, *45*(3), 380–388. https://doi.org/10.1111/coa.13511

ENT INTEGRATE have developed e.g. excel resources to assist triage https://entintegrate.co.uk/entuk2wwtt.

Other referral sources include:

UHDB ENT for patients with persistent hoarseness

UHDB SLT (Voice disorders)

Respiratory for patients with confirmed lung cancer and vocal cord palsy only (for surgical intervention / SLT dependent on severity of palsy)

APPENDIX B: Endoscopic Evaluation of the Larynx Proforma

SLT Led Observation Checkli

Led voice ax part 2.pdf

Led Voice Recording Consent.

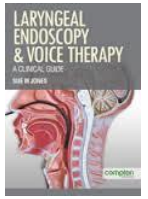
Led Voice New Patient Questionnai

ENT Voice report.docx

JVC Clinic IA.doc

JVC Clinic - Review.doc

APPENDIX B: Endoscopic Evaluation of the Larynx Proforma (Jones & Garrett 2016)



Patient Sticker

Date:_____

VHI Score: F: P: E: Total:

Patient tolerance of scope: Excellent Satisfactory Poor

Dysphonia Severity: WNL Mild Moderate Severe

		Direction to Patient	*Observations*
	1.	'Sit comfortably and relax for a moment."	**Structural abnormality:** Yes / No If yes, describe _____ **Vocal fold pathology:** Yes / No If yes, describe _____

			Reflux: Mild Moderate Severe
	2.	"Sniff and sing 'EE' several times as quickly as you can."	**Abduction/Adduction:** WNL L Paresis / L Palsy / L Sluggish R Paresis / R Palsy / R Sluggish
	3a.	"Hold an 'EE' at a comfortable pitch." ***(Stroboscopy)***	**VF closure pattern:** Complete Ant. chink Irreg. Bowing Post chink Hourglass Incomplete **Mucosal wave:** Bilateral Full R partial/severe restriction L partial/severe restriction **Constriction:** WNL Lateral (Mild / Mod. / Severe) A-P (Mild / Mod. / Severe)
	3b.	"Hold an "EE" on a low pitch." ***(Stroboscopy)***	**VF closure pattern:** Complete Ant. chink Irreg. Bowing Post chink Hourglass Incomplete **Mucosal wave:** Bilateral Full R partial/severe restriction L partial/severe restriction

			Constriction: WNL Lateral (Mild / Mod / Severe) A-P (Mild / Mod / Severe)
	3c.	"Hold an "EE" on a high pitch." ***(Stroboscopy)***	**VF closure pattern:** Complete Ant. chink Irreg. Bowing Post chink Hourglass Incomplete **Mucosal wave:** Bilateral Full R partial/severe restriction L partial/severe restriction **Constriction:** WNL Lateral (Mild / Mod / Severe) A-P (Mild / Mod / Severe)
	4.	"Sing a gentle "EE" from low to high pitch, and back low again" ***(Stroboscopy)***	**Laryngeal vertical excursion:** Flexible Static High-held Low-held **Laryngeal tilt:** WNL Held vertical Partial tilt Held tilted **Constriction:** WNL Lateral (Mild / Mod / Severe) A-P (Mild / Mod / Severe) **Tongue backing:** WNL Mild Moderate Severe **Pharyngeal wall tuning:** WNL Absent Poor Moderate **Pitch Breaks:** None Low Range Mid Range High Range

	5a.	"Repeat the following sounds: Glottal Onset EE EE EE EE EE / OO OO OO OO OO"	**Vocal fold closure (describe):** **……** **False Vocal Fold closure (describe):** ……
	5b.	"Repeat the following sounds: Breathy Onset HEE HEE HEE HEE HEE/ HOO HOO HOO HOO HOO"	**Vocal fold closure (describe):** **……** **False Vocal Fold closure (describe):** ……
	5c.	"Repeat the following sounds: Simultaneous Onset YEE YEE YEE YEE YEE/ YOO YOO YOO YOO YOO"	**Vocal folds closure (describe):** **……** **False Vocal Fold closure (describe):** ……
	6.	"Repeat these sentences" (a) The blue spot is on the key again (b) How hard did he hit him? (c) We were away a year ago; (d) We eat eggs every Easter;	**Lateral Constriction:** WNL Mild Moderate Severe **A-P constriction:** WNL Mild Moderate Severe **Tongue backing:** WNL Mild Moderate Severe

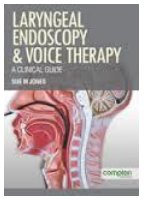
		(e) My mama makes lemon muffins; (f) Peter will keep at the peak.	**Laryngeal vertical excursion:** Flexible Static High-held Low-held
	7a.	"Sigh from high to low on a breathy sound"	**Sigh / Falsetto**: VF: ***Stiff*** Thin Thick Complete closure of VF: Yes ***No*** Larynx: ***Vertical excursion*** Elevated Lowered Static Tilt Narrow AES No Tilt
	7b.	"Whimper like a tiny puppy"	**Whimper High/ Cry**: VF: Stiff ***Thin*** Thick Complete closure of VF: ***Yes*** No Larynx: Vertical excursion ***Elevated*** Lowered Static ***Tilt*** Narrow AES No Tilt Pharynx: ***Narrow*** Normal
	7c.	"Whimper again and slide down to a lower pitch"	**Whimper Low/ Sob**: VF: Stiff ***Thin*** Thick Complete closure of VF: ***Yes*** No

			Larynx: Vertical excursion Elevated ***Lowered*** Static ***Tilt*** Narrow AES No Tilt Pharynx: ***Narrow*** Normal
	7d.	"Whinge as if you have tummy ache: Oh!"	**Whinge/ Speech**: VF: Stiff Thin ***Thick*** Complete closure of VF: ***Yes*** No Larynx: Vertical excursion Elevated Lowered Static ***Tilt*** Narrow AES No Tilt Pharynx: ***Narrow*** Normal
	7e.	"Repeat the following sounds: Nya Nya (playground taunt) / Meeow	**Twang**: VF: Stiff ***Thin*** ***Thick*** Complete closure of VF: ***Yes*** No Larynx: Vertical excursion ***Elevated*** Lowered Static Tilt ***Narrow AES*** No Tilt

			Pharynx: Narrow ***Normal***
	7f.	"Yell as if someone has just stolen your purse / wallet: Eh!"	**Yell/ Belt**: VF: Stiff Thin ***Thick*** Complete closure of VF: ***Yes*** No Larynx: Vertical excursion ***Elevated*** Lowered Static Tilt ***Narrow AES*** No Tilt Pharynx: ***Narrow*** Normal
	8.	Therapy Techniques Trialled	**Observe impact/ effectiveness of suggested exercises upon laryngopharyngeal gesture / voice.**

The Reflux Finding Score *Belafsky et al (2001) Laryngoscope*

Pseudosulcus (infraglottic oedema)	**Ventricular obliteration**	**Erythema Hyperemia**	**Vocal fold oedema**	**Diffuse laryngeal oedema**	**Posterior commisure hypertrophy**	**Granuloma**	**Thick endolaryngeal mucus**
0 = None 2 = Present	0 = None 2 = Partial 4=Complete	0 = None 2=Arytenoids 4 = Diffuse	0 = None 1 = Mild 2 = Mod 3 = Severe 4=Polypoid	0 = None 1 = Mild 2 = Mod 3 = Severe 4=Obstruct	0 = None 1 = Mild 2 = Mod 3 = Severe 4=Obstructing	0 = Absent 2 = Present	0 = Absent 2 = Present
TOTAL SCORE (>11 indicates LPR) =							



APPENDIX C: Endoscopic Evaluation of the Larynx - Additional Protocol for Singers (Jones & Garrett 2016)

		Direction to Patient	***Observations***
	1.	"Sing a gentle "EE" from the lowest note you can make to the highest note you can make, and back low again". **Repeat several times encouraging a greater pitch range each time.**	**Observe pitch change:** laryngeal excursion; tilt; constriction; tongue backing; pharyngeal muscle-use; pitch breaks
	2a.	"Sing an "EE" at a comfortable pitch and become louder whilst holding the note"	**Observe volume change:** volume change; phonation breaks; constriction; vibrato
	2b.	"Sing an "EE" at a comfortable pitch and become quieter whilst holding the note"	**Observe volume change:** volume change; phonation breaks; constriction; vibrato
	3a.	"Sing a verse and chorus of a piece you feel comfortable singing at the moment"	**Observe flexibility of laryngopharyngeal gesture and overall coordination whilst singing.**
	3b.	"Sing a verse and chorus of a piece that is causing you problems at the moment"	**Observe flexibility of laryngopharyngeal gesture and overall coordination whilst singing.**
	4.	Period of diagnostic therapy to facilitate improved laryngopharyngeal gesture for singing	**Observe impact/ effectiveness of suggested exercises upon laryngopharyngeal gesture / voice.**

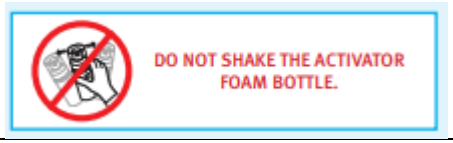
BVA The Voice Clinic Who's Who...?

https://www.britishvoiceassociation.org.uk/downloads/free-voice-care-literature/Whos%20who%20in%20the%20voice%20clinic.pdf

Led Voice patient information.pdf

JVC patient information.pdf

Objective To provide a framework outlining a sequence of activities adhered to by clinical staff performing decontamination and air leak test of the Nasopharyngoscope.	
Activity	To decontaminate and perform air leak test prior to using the Nasopharyngoscope.
Inclusion criteria	All patients
Activity details	
Prior to first use – If the scope has not been kept in a Plasma bag or a Drying Cabinet.	**Tristel Trio** **Step 1 – Cleaning** The first step in the decontamination procedure of medical devices is cleaning of the surface to remove soil and organic matter prior to high-level disinfection. The Pre-Clean Wipe is impregnated with a triple-enzymatic detergent and surfactant. The Pre-Clean Wipe is CE Marked as a Class I Medical Device (MDD 93/42 EEC) • Disinfect hands and wear gloves when handling disinfectants and medical devices. • Take one Pre-Clean Wipe sachet. • Remove the Wipe from its sachet and lay it out in the palm of your hand. • Wipe the surface of the medical device until soil and organic matter have been visibly removed. In case of heavy soiling more than one Wipe may be used. • Discard the used Wipe and gloves in accordance with local regulations. Do not reuse. If using the Tristel Quality Audit Trail Record Book, keep the empty Wipe sachet for traceability. **Step 2 – Activating & High – Level Disinfecting**

	The second step in the decontamination procedure is high-level disinfection of the medical device. The Sporicidal Wipe is CE Marked as a Class IIb Medical Device (MDD 93/42 EEC). • Disinfect your hands and put on new gloves. • Take one Sporicidal Wipe sachet. • Remove the Wipe from its sachet and lay it out in the palm of your hand. Note: Activate the Sporicidal Wipe as soon as you have removed it from the sachet and use it immediately. • Remove the lid from the Activator Foam bottle. Apply two aliquots of Activator Foam onto the Sporicidal Wipe. • Fold the Wipe in on itself and scrunch together 15 seconds to activate. Ensure that the Wipe is evenly covered with foam. Presence of a chlorine-like odour confirms that the Wipe is ready to use. Use the activated Wipe immediately. • Wipe the surface of the medical device in one movement to cover it with foam, ensuring all areas come into contact with the Wipe. Pay special attention to edges, ridges, indentations, and areas where different materials connect. • Observe a 30-second contact time. • Discard the used Wipe in accordance with local regulations. Do not reuse. If using the Tristel Quality Audit Trail Record Book, keep the empty Wipe sachet for traceability 

Note: If the Activator Foam bottle is being used for the first time, depress the pump two to four times to prime it. The first output from the foam bottle can be left on the Wipe, to be followed by complete aliquots. The Activator Foam bottle is then primed for subsequent use.

Step 3 - Rinsing

The third and final step in the decontamination procedure is rinsing of the medical device. The Rinse Wipe is impregnated with de-ionised water and a lowlevel of antioxidant which removes chemical residues from a surface.

Each Rinse Wipe sachet is packed and then sterilised by gamma-irradiation. The Rinse Wipe is CE Marked as a Class I Sterile Device (MDD 93/42 EEC)

- Take one Rinse Wipe sachet.
- Remove the Wipe from its sachet and lay it out in the palm of your hand.
- Wipe the surface of the device that has been decontaminated to remove excess foam.
- Discard the used Wipe and gloves in accordance with local regulations. Do not reuse. If using the Tristel Quality Audit Trail Record Book, keep the empty Wipe sachet for traceability.

Note: Upon completion of the decontamination cycle the device should

	be left to air dry. Store the device in accordance with hospital protocols to prevent damage or recontamination **Step 4 – Traceability** The Tristel Trio Wipes System can include either paper-based or digital traceability. • The Tristel Quality Audit Trail Record Book can be used to manually document the Tristel Trio Wipes System decontamination procedure. • Tristel 3T is a digital traceability system comprising an online Portal for data management and reporting, and an App to record Tristel Trio Wipes System decontamination procedures. The 3T App features optional training videos for increased compliance. Both traceability systems include guidance on how to complete the record process correctly. Note: Tristel 3T is subject to market availability. **Plasma bags** • Disinfect hands and apply gloves and apron. • Check Plasma bag has no rips or tears in it (if it does, do not use the scope and send back to HSSU or put back through a wash) • Check Plasma bag is still in date (30 days life) • Take scope out of tray or plasma bag in the room where the Dr/Consultant is, ready to connect to the light source or stack system. **Drying Cabinet** • Disinfect hands and apply gloves and apron.

	• Take scope out of drying cabinet. • Place scope into a clean clear bag, with a plain label attached, with the time it was taken out of the drying cabinet (3 hours life)
Decontamination of the Nasopharyngoscope, using Tristel Trio wipe system, Lancer and Tristel Step 2 and the Wassenburg washer.	**Tristel Trio** **Step 1 – Cleaning** The first step in the decontamination procedure of medical devices is cleaning of the surface to remove soil and organic matter prior to high-level disinfection. The Pre-Clean Wipe is impregnated with a triple-enzymatic detergent and surfactant. The Pre-Clean Wipe is CE Marked as a Class I Medical Device (MDD 93/42 EEC) • Disinfect hands and wear gloves when handling disinfectants and medical devices. • Pressure/Leak test scope – Storz 3 minutes and DP med 30 seconds. • Take one Pre-Clean Wipe sachet. • Remove the Wipe from its sachet and lay it out in the palm of your hand. • Wipe the surface of the medical device until soil and organic matter have been visibly removed. In case of heavy soiling more than one Wipe may be used. • Discard the used Wipe and gloves in accordance with local regulations. Do not reuse. If using the Tristel Quality Audit Trail Record Book, keep the empty Wipe sachet for traceability. **Step 2 – Activating & High – Level Disinfecting** The second step in the decontamination procedure is high-level

	disinfection of the medical device. The Sporicidal Wipe is CE Marked as a Class IIb Medical Device (MDD 93/42 EEC). • Disinfect your hands and put on new gloves. • Take one Sporicidal Wipe sachet. • Remove the Wipe from its sachet and lay it out in the palm of your hand. Note: Activate the Sporicidal Wipe as soon as you have removed it from the sachet and use it immediately. • Remove the lid from the Activator Foam bottle. Apply two aliquots of Activator Foam onto the Sporicidal Wipe. • Fold the Wipe in on itself and scrunch together 15 seconds to activate. Ensure that the Wipe is evenly covered with foam. Presence of a chlorine-like odour confirms that the Wipe is ready to use. Use the activated Wipe immediately. • Wipe the surface of the medical device in one movement to cover it with foam, ensuring all areas come into contact with the Wipe. Pay special attention to edges, ridges, indentations, and areas where different materials connect. • Observe a 30-second contact time. • Discard the used Wipe in accordance with local regulations. Do not reuse. If using the Tristel Quality Audit Trail Record Book, keep the empty Wipe sachet for traceability 

	Note: If the Activator Foam bottle is being used for the first time, depress the pump two to four times to prime it. The first output from the foam bottle can be left on the Wipe, to be followed by complete aliquots. The Activator Foam bottle is then primed for subsequent use. **Step 3 - Rinsing** The third and final step in the decontamination procedure is rinsing of the medical device. The Rinse Wipe is impregnated with de-ionised water and a lowlevel of antioxidant which removes chemical residues from a surface. Each Rinse Wipe sachet is packed and then sterilised by gamma-irradiation. The Rinse Wipe is CE Marked as a Class I Sterile Device (MDD 93/42 EEC) • Take one Rinse Wipe sachet. • Remove the Wipe from its sachet and lay it out in the palm of your hand. • Wipe the surface of the device that has been decontaminated to remove excess foam. • Discard the used Wipe and gloves in accordance with local regulations. Do not reuse. If using the Tristel Quality Audit Trail Record Book, keep the empty Wipe sachet for traceability. Note: Upon completion of the decontamination cycle the device should be left to air dry. Store the device in accordance with hospital protocols to prevent damage or recontamination **Step 4 – Traceability** The Tristel Trio Wipes System can include either paper-based or digital traceability.

	• Complete the Tristel quality audit record book after each decontamination. Ensuring all three lot numbers and expiry dates are documented. Including patient ID label if used on patient. • The Tristel Quality Audit Trail Record Book can be used to manually document the Tristel Trio Wipes System decontamination procedure. Note: After 4 uses, the scope needs to be put to bed and sent to HSSU. **Lancer and Tristel Step 2** **Step 2 – Activating & High – Level Disinfecting** The second step in the decontamination procedure is high-level disinfection of the medical device. The Sporicidal Wipe is CE Marked as a Class IIb Medical Device (MDD 93/42 EEC). • Disinfect your hands and put on new gloves. • Pressure/Leak test scope – Storz 3 minutes and DP med 30 seconds. • Fill sink with water and Lancer - 20-40mls of Lancer in 10 Litres (5 pumps, if you have a pump dispenser) • Leave to soak for 5 minutes. • While soaking, wipe all areas of scope with a soft wipe. • Disinfect hands and apply new gloves. • Take one Sporicidal Wipe sachet. • Remove the Wipe from its sachet and lay it out in the palm of your hand. Note: Activate the Sporicidal Wipe as soon as you have removed it from the sachet and use it immediately. • Remove the lid from the Activator Foam bottle. Apply two

aliquots of Activator Foam onto the Sporicidal Wipe.

- Fold the Wipe in on itself and scrunch together 15 seconds to activate. Ensure that the Wipe is evenly covered with foam. Presence of a chlorine-like odour confirms that the Wipe is ready to use. Use the activated Wipe immediately.
- Wipe the surface of the medical device in one movement to cover it with foam, ensuring all areas come into contact with the Wipe. Pay special attention to edges, ridges, indentations, and areas where different materials connect.
- Observe a 30-second contact time.
- Discard the used Wipe in accordance with local regulations. Do not reuse. If using the Tristel Quality Audit Trail Record Book, keep the empty Wipe sachet for traceability

Note: If the Activator Foam bottle is being used for the first time, depress the pump two to four times to prime it. The first output from the foam bottle can be left on the Wipe, to be followed by complete aliquots. The Activator Foam bottle is then primed for subsequent use

Step 3 – Drying

	• Place scope on clean area on the side or hang • Remove excess water with a paper towel • Place scope into a clean clear bag or tray, with a plain label attached, with the time it was dried (3 hours life), along with the Tristel sticker, which will be ready to put into the next patients set of notes. **Step 4 – Traceability** The Tristel Trio Wipes System can include either paper-based or digital traceability. • Complete the Tristel quality audit record book after each decontamination. Ensuring all three lot numbers and expiry dates are documented. Including patient ID label if used on patient. • The Tristel Quality Audit Trail Record Book can be used to manually document the Tristel Trio Wipes System decontamination procedure. Note: After 4 uses, the scope needs to be put to bed and sent to HSSU. **Using the Wassenburg Washers** **Step 1** • Disinfect your hands and put on new gloves. • Pressure/Leak test scope – Storz 3 minutes and DP med 30 seconds. • Write patients details on scope log sheet • Fill sink with water and Lancer - 20-40mls of Lancer in 10 Litres (If you have a pump dispenser, may vary) • Leave to soak for 5 minutes.

	• While soaking, wipe all areas of scope with a soft wipe. **Step 2** • Once 5 minutes is up, transfer scope from sink/trough to washer. • Attach all leads to the scope • Set scope to the correct wash • Complete patients' details on the scope log sheet **Step 3** • Once the wash is complete • Disinfect hands, apply new gloves and apron • Transfer scope from washer to dryer cabinet. Note: Drying cabinet has a seven-day life span and training for washer and cabinet, needs to be provided before use.
Performing the air leak test on the Nasopharyngoscope (DP Medical) after use.	• The air leak test must be performed every time Nasopharyngoscope has been. • Push the connection for the air leak tester on to the connection for the scope. • Push down and rotate to the right ensuring both lock in place. • Then pump the air leak tester to between 140-160mmHg (inside the green bracket) • The scope should be fully immersed in water. • Give the scope a wiggle, to allow air movement. • Observe gauge for 20 seconds, looking for any drop in pressure. • If a drop in pressure is noted, check connection between scope and tester as may not be connected correctly. • Perform test again. • If pressure continues to drop, the scope is leaking and should not be used.

	• Remove scope from clinical use and complete a medical equipment defect/service form, found on the intranet and send to medical engineering. • If pressure remains still for 20 seconds, release pressure, remove from the water and remove connection from scope. • Scope has now passed the air leak test and is ready to be Tristelled or washed.
Performing the air leak test on the Nasopharyngoscope (Storz) after use.	• The same process as for the DP Medical scopes, however the air leak test is not in water. • If pressure drops by 10mmHG or more within 3 minutes, this will indicate a leak. • If the scope fails the test, the test should be done up to 3 times before it is removed from clinical use and sent to medical engineering.
Performing protein test on Nasopharyngoscope	• Test should be performed weekly, on a decontaminated scope. • The results of the audit will determine how often the protein test will be required following this. • Take a swab out of the sterile packet and cover end of swab with sterile water. • Swab the Nasopharyngoscope around the tip and further up the shaft. Use areas of the scope that are most likely to have been in contact with the patient. • Put the swab into the small test tube with the liquid indicator inside. • If the liquid changes to a blue colour, then protein has been detected. If the liquid is unchanged, then no protein has been detected. • If protein is detected, then the scope will need to be cleaned again using the Tristel Trio System and another protein test should be undertaken. • A record of results should be kept for audit purposes

At end of each Clinic	• Nasopharyngoscope should be sent to HSSU at the end of each clinic session when it has been used. • The scope does not need to be cleaned, to be sent down to HSSU. • Inform HSSU that the scope is ready for collection.

Related policies / legislation

Derby and Burton hospital FT Infection prevention control policy. Issued Jan 19, review Nov 22.

Tristel Trio Wipe System: cleaning and disinfection manual

DP Medical Flexible Nasopharyngoscope manual

ENT UK guidelines

Ambu ascope 4 Rhinolaryngo slim manual