Videofluoroscopic Evaluation of Oropharyngeal Swallowing Disorders (VFS) in Adults: The role of Speech and Language Therapists

Policy Statement
January 2007
Mission statement

The Royal College of Speech and Language Therapists (RCSLT) recommends that any person with feeding or swallowing difficulties have equal access to a timely, responsive and quality instrumental evaluation of swallowing as part of a dysphagia care pathway. This is reflected in current UK government policies on needs-led services. Access to the service should be based on clinical need and be available regardless of age, disability, ethnicity, gender or creed. This position paper is intended to advise on the SLT contribution to the provision of and best practice in videofluoroscopic evaluation of oropharyngeal swallowing disorders (VFS)* in an adult** population. It does not cover other uses of videofluoroscopic imaging, e.g., air insufflation in the assessment of alaryngeal speakers. Speech and Language Therapy services should be adequately planned and resourced to provide this service, based on local demography and user need. Speech and Language Therapists have a key role in delivering this clinical service in a multidisciplinary context. This document serves as the basis for determining the general principles for SLT involvement in the VFS procedure for adults at a local service level. It is required however that it will be supplemented by locally agreed clinical governance protocols. It supersedes previous RCSLT guidance in respect of VFS for adults (Invasive Procedures Guideline, June 1999).

*The term “Videofluoroscopic Evaluation of Oropharyngeal Swallowing Disorders” covers both feeding and swallowing disorders and will be used interchangeably with the abbreviation “VFS” throughout this document.

**A separate document covering the practice of VFS in the paediatric population will be published in due course by RCSLT.
Following the “Innovation in Speech and Language Therapy Services – a Focus on ENT” Consultation Day, March 2004, an expert panel was convened by RCSLT in order to write this policy statement. The panel members who drew up the initial draft were:

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This final document is the result of extensive consultation with specialist SLTs (dysphagia) and many other colleagues in and beyond the SLT profession. The authors would like to acknowledge the contribution of Dysphagia Special Interest Groups (SIGs) and RCSLT Dysphagia Advisors in commenting on draft versions of this document. Recommendations on practice in this document are made on the basis of research evidence and consensus agreement.

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Context

1.1 Background

Videofluoroscopy of swallow (VFS) is a modification of the standard barium swallow examination used in the assessment and management of oropharyngeal swallowing disorders. Speech and Language therapists (SLTs) have had a long association with the conduct of this procedure. It is described in a number of sources as the “gold standard” for the assessment of oropharyngeal dysphagia (Daniels, McAdam, Brailey, and Foundas, 1997; Robbins, Coyle, Rosenbek, Roecker, and Wood, 1999) though the “gold standard” title is contested elsewhere in the literature (Atherton and Hyland 2003; Kidder Langmore and Martin 1994; Hiss and Postma 2003). VFS is a dynamic fluoroscopic imaging procedure. The physiology of swallowing is graphically revealed, typically by means of employing a range of food and fluid consistencies. VFS can be used for assessment, treatment and management of swallowing in a range of client populations where the suspected condition or disease process impacts on swallow function and may result in a risk of death, pneumonia, dehydration, malnutrition and psychosocial issues related to discomfort and difficulty eating and drinking.

1.2 Scope of practice

The Royal College of Speech and Language Therapists (RCSLT) considers that Speech and Language Therapists have a unique role in the assessment and management of oropharyngeal dysphagia. Within this context, SLTs play a key part in delivering VFS services for adults in a multidisciplinary context. RCSLT acknowledges that medical practitioners are the only professionals qualified and licensed to offer medical diagnoses.

SLTs must ensure that approval has been given by the employing organisation for VFS to be incorporated into SLT practice. This should include development of departmental policies and procedures stating scope and range of practice. A description of responsibilities related to VFS must be clearly stated in an individual’s job description. Clinical competence to undertake the VFS procedure must be evidenced by additional specialist training in dysphagia management, specifically VFS, and an appropriate career pathway. Additionally, theoretical knowledge and clinical practice in VFS must be evidenced within an individualised Knowledge and Skills Framework (KSF) outline and annual review process (See Section 5: Workforce Development, Competencies and Training). If the department is undertaking any roles or duties which are beyond the traditional scope of SLT practice (as above), RCSLT strongly recommends that local endorsement be sought from within local clinical governance structures. RCSLT recommends that department managers regularly review the ongoing maintenance of clinical competencies. (See Section 5: Workforce Development, Competencies and Training).

1.3 Description of the VFS evaluation.

Swallowing involves a series of rapid, integrated movements of the oral cavity, pharynx, larynx, trachea and oesophagus which cannot be observed directly.
VFS involves dynamic fluoroscopic imaging of this process. Patients are offered a range of food and fluid consistencies incorporating contrast media and are observed chewing, manipulating the bolus and swallowing. Experienced observers should be able to determine the effectiveness and safety of the swallow.

The procedure is viewed on a monitor. Digital or video recording enables later review of the images, accessible storage of the examination and subsequent inter- and intra-patient comparison and monitoring by members of the VFS Clinic team. (See Section 1.7 Multidisciplinary Context)

The procedure typically includes assessment in the lateral and antero-posterior (AP) planes. Positioning, manoeuvres and dietary modification are frequently trialled during the procedure to determine the impact on efficiency and safety of swallowing (See Appendix 2). Following the procedure, analysis of oropharyngeal swallow features and recommendations optimising swallow efficiency and safety are reported by the team and are discussed with the patient, carers and referrer. (See Section 2.2 Interpretation and reporting)

1.4 Purpose of VFS

The purpose of the VFS evaluation may include:
- Evaluation of oropharyngeal structures
- Evaluation of swallowing physiology, including lip and tongue function, velopharyngeal closure, base of tongue retraction; hyolaryngeal elevation; pharyngeal contraction, upper oesophageal sphincter function, and airway protection mechanisms
- Assessing swallow function in relation to a variety of consistencies of food and liquid
- Detecting the presence of and response to aspiration, silent or overt
- Assessing the impact of therapeutic interventions on swallowing physiology, safety and efficiency
- Timing of swallow events where appropriate equipment is available
- Ongoing assessment and monitoring of dysphagia over time
- Biofeedback
- Patient, carer and health professional education
- Contributing to the diagnostic profile (e.g. in suspected Parkinson’s Disease) in the context of a multi-disciplinary assessment.

For further discussion of these uses of VFS, please refer to manuals of dysphagia and VFS practice such as Ekberg (2004), Jones (2003), Logemann (1993) and Murray (1999).

1.5 Outcomes of VFS

These will include:
- A report of findings from the VFS study (See Section 2.2 Interpretation and reporting)
- Impact of postures, strategies and manoeuvres
- Determining optimal method of bolus delivery, consistency and size
- Impact of therapeutic techniques
• Determining future patient management, including dietary and other recommendations, therapy plan, onward referral, and review arrangements
• Supporting informed decision making by patient and carers.

1.6 Suitability for VFS and contra-indications:

The suitability and safety of VFS should be assessed on an individual basis. (Refer to Appendix 1 for Indications for selecting VFS or Fibreoptic Endoscopic Evaluation of Swallow (FEES)).

The following non-exhaustive list of conditions and patient groups is appropriate for consideration for the undertaking of VFS:

• Acquired neurological disorders, e.g. stroke, traumatic brain injury, degenerative neurological conditions, etc.
• Benign and malignant head and neck conditions, e.g. Laryngectomy, post-radiotherapy problems, etc.
• Tracheostomised and/or ventilated patients
• Respiratory conditions such as Chronic Obstructive Pulmonary Disease
• Spinal injuries
• Burns or Trauma
• Adults with cerebral palsy or learning disability
• Adults with cleft lip / palate / velo-pharyngeal insufficiency.

Additionally, the following suspected features may warrant consideration for proceeding to VFS:

• Laryngeal penetration
• Aspiration
• Upper oesophageal sphincter dysfunction.

Possible contra-indications include:

• Patient pregnancy
• Medical instability, such as drowsiness and including those conditions where portable ventilation is not possible
• Difficulty maintaining an appropriate stable position
• Difficulty co-operating with the procedure
• Known or suspected adverse reaction to contrast media
• Nil By Mouth for reasons other than dysphagia
• Unnecessary exposure to radiation of patient or person (SLT, carer, etc) feeding patient.

Caution should be exercised with high risk patients, for whom additional precautions may be necessary. Appropriate precautions should be determined by the multi-disciplinary team. High risk patients may include the following presentations:

• Suspicion of large volume aspiration
• Suspicion of undiagnosed cancers of head and neck, trachea or oesophagus.
• Recent history of respiratory distress/arrest due to aspiration
• Assessment of impact of surgery or penetration injury (e.g. fistulae).

See also Sections 1.8 Facilities and equipment and 1.9 Local arrangements for VFS Clinics.

1.7 Multidisciplinary context

VFS should be performed in a multidisciplinary context with locally agreed roles and responsibilities for the professionals involved. Professionals who make up the multidisciplinary team (MDT) involved in VFS typically include the SLT(s) specialised in the procedure, radiologist and radiographer. Other professionals who may be involved in aspects of the VFS evaluation are the physician, surgeon, nurse or physiotherapist. The medical practitioner overseeing the patient’s care must be informed of the intention to perform the VFS. Where there is disagreement as to how appropriate the procedure is, local negotiation should seek to ensure a satisfactory outcome for the patient. A radiologist may or may not be present during the VFS examination dependent on local protocol/clinical governance arrangements. In these circumstances arrangements must be in place to ensure ready access to appropriate medical, nursing and other support in the event of a complication. (Refer to Section 1.9 Local arrangements for VFS Clinics and Section 3 Health, Safety and Data Protection).

It is considered to be good practice for the SLT responsible for patient management and, where appropriate, for significant carer(s) to participate in the VFS study with a view to achieving an optimal patient outcome.

1.8 Facilities and equipment

VFS must be undertaken with the appropriate fluoroscopy imaging equipment capable of providing dynamic images with minimal radiation exposure to patients and staff. VFS is normally carried out in a designated radiology area with appropriate radiation protection equipment (such as thyroid protectors) as approved by the Radiation Protection advisor of the organisation in order to comply with requirements of the IR(ME)R 2000 statutory instrument.

Arrangements must be in place to ensure that the VFS 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, e.g. suction.

The VFS procedure must be recorded (either to video tape or digitally) using equipment that provides good quality images (e.g., SVHS but consult locally with Medical Illustration or Clinical Physics to ensure that these requirements are optimally satisfied). Recording and viewing equipment should have the capacity for recording sound and for still-advance to enable frame by frame analysis.
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VFS-specific contrast materials in a range of consistencies are commercially available currently on a named-patient basis only. Where feasible their use is recommended as they are specifically designed to optimise bolus visualisation using standard viscosities and to minimise adherence and coating on mucosa. In the absence of the VFS-specific contrast materials, there should be agreement with the Radiology service locally as to the appropriate media to use on a routine basis. In the case of high risk patients (as defined according to local protocol, e.g. where there is the possibility of large volume aspiration) the initial test swallow should be small volume (<5 ml) using water soluble contrast materials such as non-ionic isotonic agents e.g. Omnipaque or Gastromiro. Use of Gastrograffin is contra-indicated due to its hypertonic properties and carries an attendant risk of pulmonary oedema if aspirated (Auffermann et al 1988). Barium sulphate viscosities should be determined according to manufacturers’ instructions, and it should be noted that variations and additions to foodstuffs are not licensed. The status of barium sulphate in relation to medications as governed by Patient Group Directions is at present uncertain. SLT VFS practitioners will need to determine the requirement to be covered by Patient Group Direction at a local level.


The provision of appropriate seating is crucial for attaining appropriate VFS images. There are specially designed chairs available commercially for VFS. It is often possible to achieve adequate images with patients positioned on portering trolleys or their own wheelchairs. Consideration may be given to the use of foam wedges and other supports. Other professionals such as radiographers and physiotherapists, can be consulted to determine optimal positioning and advise on the range of equipment required.

Other equipment required for an effective VFS procedure may include:
- Mixing equipment e.g. spoons/whisk
- Appropriate feeding equipment e.g. plastic spoons, straws
- Sundry equipment e.g. plastic gloves, aprons, alcohol wipes
- Other disposable medical supplies e.g. paper trays, syringes.

1.9 Local arrangements for VFS Clinics

VFS clinics can be conducted with a range of staffing configurations. It is a requirement of the IR(ME)R 2000 statutory instrument that the employing organisation must establish clear roles and responsibilities for the “practitioner”,

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- **“Practitioner”** – The practitioner shall be responsible for the justification of a medical exposure and such other aspects of a medical exposure as is provided for in these Regulations.‟
  “Practitioner” means a registered medical practitioner, dental practitioner or other health professional who is entitled in accordance with the employer’s procedures to take responsibility for an individual medical exposure.‟

- **“Operator”** - The operator shall be responsible for each and every practical aspect which he carries out as well as for any authorisation given pursuant to regulation 6(5) where such authorisation is not made in accordance with the guidelines referred to in regulation 6(5).‟
  “Operator” means any person who is entitled, in accordance with the employer’s procedures, to carry out practical aspects including those to whom practical aspects have been allocated pursuant to regulation 5(3), medical physics experts as referred to in regulation 9 and, except where they do so under the direct supervision of a person who is adequately trained, persons participating in practical aspects as part of practical training as referred to in regulation 11(3).‟

- **“Referrer”** – The referrer shall supply the practitioner with sufficient medical data (such as previous diagnostic information or medical records) relevant to the medical exposure requested by the referrer to enable the practitioner to decide on whether there is a sufficient net benefit as required by regulation 6(1)(a).‟
  “Referrer” means a registered medical practitioner, dental practitioner or other health professional who is entitled in accordance with the employer’s procedures to refer individuals for medical exposure to a practitioner.‟

Given the complex nature of the legal framework and the use of these terms which may be open to misinterpretation, it is imperative that SLTs should consult with their Radiology, Radiography, Radiation Protection, Medical and Surgical colleagues to identify the roles of the Practitioner, Operator, and Referrer as required by the IR(ME)R 2000 statutory instrument for the VFS service. When the staffing configuration and role assignment have been agreed and documented at local level, this must be adhered to; casual absences of agreed personnel should result in cancellation of the clinic.

Optimally, SLTs conduct this service within the context of a combined clinic with a Consultant Radiologist in addition to the support of radiographers and other professionals (see section 1.7 Multidisciplinary context). Recent reports indicate that access to VFS for patients in the UK is under threat (Begg and Paton 2004) due to workforce difficulties and pressure on radiologist time (Royal College of Radiologists: Clinical Radiology a workforce in Crisis 2002). Against this
background RCSLT considers that it is within the scope of SLT practice to lead the VFS Clinic or work closely in conjunction with specialist radiographers. This is subject to appropriate clinical safeguards and governance arrangements and clear service boundaries being established locally in a multidisciplinary context. For instance, clinics with a significant head and neck cancer or cranio-facial abnormality caseload, presence of a radiologist should be considered best practice. Growing multi-disciplinary expertise (e.g., consultant radiographer posts with a particular interest in this area) may lead to the development of other appropriate VFS clinic models.

Where the SLT is leading the clinic, it is essential that the SLT has undertaken training to satisfy the requirements of the IR(ME)R 2000 statutory instrument and has been licensed by their employing authority to undertake VFS procedures. In these circumstances, appropriate access to radiologist / medical support is obligatory. Whilst it is acknowledged that these clinics are not, as yet, evidence-based, RCSLT supports the development of such government-promoted extended scope practice initiatives (Department of Health. Implementing a scheme for Allied Health Professionals with Special Interests. http://www.dh.gov.uk/assetRoot/04/06/16/11/04061611.pdf) in order to maintain equity of access to the VFS service for service users.

**RCSLT categorically does not endorse the development of a service by the SLT practitioner or department acting alone.**

Where SLT-led or joint SLT/radiographer VFS clinics are established, a clearly defined and limited remit must be agreed locally with the delegating radiologist and other key professionals. **SLTs will not undertake a medical diagnostic function.** Every effort must be made to ensure that the patient receives the correct instrumental procedure based on referral and case history information (see also below: 2.1.1 Referral). Local protocol should determine the appropriate staffing required to perform the procedure competently and safely. Before setting up an SLT-led VFS clinic, full clinical risk assessment must have been undertaken. Following risk assessment, clear contingency plans must be drawn up to ensure that any unexpected issues arising are speedily and satisfactorily addressed (e.g. onward fast-track referral for opinion). Possible adverse events may include:

- reaction to aspiration
- deterioration in the condition of an acutely unwell patient
- managing an agitated or aggressive patient
- identifying risk of unsuspected medical diagnostic issues, e.g. suspected tumour or tracheo-oesophageal fistula

The risk management process should be reviewed regularly according to local Health and Safety guidelines. (See also Section 3.1 Health and Safety: general procedures)

Section 2 VFS Procedural issues

2.1 The VFS Pathway

2.1.1 Referral.
Patients will be referred for a VFS study according to local agreements drawn up in a written document and agreed by all parties. Referring sources may include medical practitioners and designated referring SLTs. Patients must undergo an appropriate clinical assessment of swallowing by an SLT prior to VFS being undertaken. This should:

- assist in determining the nature and severity of the swallowing disorder and other factors contributing to the conduct of the VFS, such as cognition, presence of the carer, feeding arrangements, positioning, anxiety, etc.

- determine the appropriateness, timing, and type of instrumental assessment most likely to yield relevant information to guide clinical decision making.

- yield information to guide the VFS procedure. The VFS can then be tailored to address specific questions raised during the clinical assessment. This will maximise the clinical relevance and effectiveness of the procedure.

- enable the patient to obtain information in an appropriate format about any planned instrumental assessment procedure and to give informed consent (See Section 2.1.3).

It is the responsibility of the referring SLT to inform the patient’s medical or surgical team prior to the assessment that a VFS is planned.

2.1.2 Patient and carer information.

Patients must be fully informed about the VFS 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.

2.1.3 Consent.

Consent to a procedure is subject to legal requirements (e.g. Mental Capacity Act 2005, Adults with Incapacity (Scotland) Act 2000) and may be subject to local variations in practice. It is essential that the local SLT VFS Procedures Document specifies in detail the arrangements for patient consent to VFS, including risk for “female(s) of childbearing age” (IR(ME)R 2000 statutory instrument). RCSLT recommends that it is good practice that there is a written record of consent (e.g. documentation of discussion with patient recorded in patient’s notes). Separate consideration needs to be given to gaining consent in relation to storage and use of audiovisual material. (See also Section 3.2 Data protection: storage of images).

2.1.4 VFS protocol.

“Significant variability exists in the protocols for VFSs” (O'Donoghue and Bagnall 1999). Other sources report that “because of the variability among patients, no matter what the diagnosis, it is difficult to establish a firm protocol….The examination
is modified as it proceeds depending on the videofluorographic findings.” (Perlman et al. 1997). McCullough et al (1999) suggest that “…there are areas where standardization is possible.” Additionally, the Consensus Group noted the strength of findings in Martino et al. (2004); they reported that all (Canadian) speech and language pathologists surveyed supported the inclusion of the following five features in a VFS protocol:

- Pharyngeal bolus residue
- Timing of pharyngeal swallow
- Laryngeal response to penetration
- Laryngeal response to aspiration
- Effectiveness of laryngeal responses.

Despite differences of opinion in the literature in determining a set VFS protocol, the Consensus Group agreed, through a series of focused clinical discussions, a framework for safe clinical practice. This framework details “features for minimum standard” and “best clinical practice”. The Consensus Group also agreed that some areas highlighted in the literature were beyond the remit of current UK clinical practice or required further evidence base and therefore these were assigned to a third section entitled “Areas for Research”. (See Appendix 2 for details).

The Consensus Group recommended the adoption of a standardised protocol to sequence and guide the procedure as well as providing an interpretation and training tool.

2.2 VFS interpretation and reporting.

2.2.1 Terminology

The VFS literature describes a large variety of radiological features in the VFS evaluation, which are broadly differentiated as anatomical landmarks or pathophysiological features or subjective evaluative observations (see, for instance, Perlman 1997; Wilcox et al. 1996). Throughout the literature there is a major issue concerning agreement over terminology, variations in which may detract from the ultimate usefulness of VFS; “…a measure of swallowing delay may be a needed component of the VFS examination. Regardless, with the innumerable different definitions of delayed swallow that exist ……., the absence of normative data for any particular definition renders all less definitive.” (McCullough et al. 1999).

In the absence of a universally accepted terminology for this procedure (as determined by a comprehensive literature search), the Consensus Group examined a list of terms based on those used in Perlman (1997). The Group recognised the existence and use of these terms but concluded that it was not possible to reach agreed definitions for these terms. For further examples of terminology and definitions used in VFS, please refer to manuals of dysphagia and VFS practice such as Logemann (1993), Murray (1999), Ekberg (2004), and Jones (2003). The adoption of terms for routine clinical use is likely to be determined by the protocol. Local SLT groups and services in discussion with their MDT colleagues are encouraged to formulate a set of anatomy and physiology terms for use in consistent reporting. Where necessary (for example in reports to other SLT services), a glossary should be provided.
It was proposed as a matter of good practice to endorse, where possible, the use of a scale to rate severity of pharyngeal pooling, residue, laryngeal penetration and aspiration. At present the best supported scale is the Rosenbek 8-point Penetration-Aspiration Scale (Rosenbek et al. 1996).

2.2.2 Reliability of interpretation of VFS images.

The literature for VFS has consistently raised significant concerns about the reliability (both inter- and intra-rater) of the interpretation of VFS images. (Becker et al. 2005; Stoeckli et al. 2003; McCullough et al. 2001; Wilcox et al. 1996; Gibson et al. 1995 and Ekberg et al. 1988). Factors listed in these studies influencing inter- and intra-rater agreement include:

- Quality of image (e.g., flaring)
- Quality of video recordings vs. real-time viewing
- Lack of clinical information
- Single vs. “team” rating
- Lack of slow motion facility
- Lack of consensus of when to rate feature - worst, best, average
- Level of experience of the rater
- Speed of liquid swallows
- Complexity of task.

There is some evidence in the literature that the reliability of subjective evaluative observations may be improved by:

- Team discussion to reach consensus (Scott et al. 1998)
- Training provided by an experienced practitioner to improve inter-rater agreement (Kendall et al. 2000; Logemann et al. 2000)
- Use of penetration / aspiration scale (Rosenbek et al. 1996).

Although it may be possible to improve rater reliability, it should be borne in mind that this does not guarantee the validity of the interpretation. The Consensus Group recommended the setting-up of local networks of experienced VFS practitioners to lead the development of improved inter-rater reliability and accuracy of interpretation. The setting-up of specialty-specific sub-groups, e.g. in Head and Neck cancer for interpreting altered anatomy and physiology, should be considered. There is considerable scope for further research and improvement in practice in this area.

2.2.3 Interpretation issues related to the clinical application of VFS findings.

Reporting of findings and subsequent recommendations for management in VFS must be placed in the context of normal ageing, patient disease, co-morbidity and patient choice, etc. It should be borne in mind that VFS provides a snapshot in time of the swallow function. Normal variability is well recognised, e.g. the presence of the bolus in the pharynx in younger volunteers before initiation of the swallow (Dua et al. 1997). Studies in the dysphagia literature also highlight the
importance of other factors aside from an instrumental assessment in determining the risk of aspiration for developing pneumonia, e.g. oral care and dependence for feeding. (Langmore et al 1998, Langmore et al 2002).

In addition, the VFS literature describes limitations in the applicability and effectiveness of swallowing interventions such as the effortful swallow, supraglottic swallow or chin tuck to achieve the desired functional changes (Bulow et al 2001, Bulow et al 2002, Kahrilas et al 1991, Shanahan et al 1993). It is incumbent on the SLT performing VFS to be aware of the aforementioned issues when making management recommendations for the patient’s care plan.

2.2.4 Reporting

The literature on standards for VFS reporting also describes a range of approaches. Some authors recommend a “narrative” style with broad topic headings (e.g. Murray (2003), Kendall et al (1997)) while others suggest the use of a detailed checklist (e.g. Logemann (1998)).

VFS reporting is subject to professional generic standards (Section 7.2.7, Communicating Quality 3. RCSLT 2006). Reporting must reflect the requirements of the recipient audience and be responsive to the clinical question that prompted the VFS evaluation. The Consensus Group agreed VFS reporting standards, which specify the “features for minimum standard” and “best clinical practice”. Similarly, the Consensus Group also agreed that some areas highlighted in the literature were beyond the remit of current clinical practice or required further evidence base and therefore these were assigned to the “Areas for Research” (See Appendix 3 for details).

3 Health, Safety and Data protection

3.1 Health and Safety: general procedures:

SLTs involved in the conduct of VFS are responsible for a full awareness of health and safety issues and must adhere to local policies and their application. These issues include:

*Use and care of substances hazardous to health (COSHH):* training must be obtained and regularly updated if relevant substances are to be used and/or stored within the VFS clinical area. Any used items of consumable equipment must be disposed of as clinical waste or as advised by local infection control policy.

*Infection control:* disease transmission is possible via contact with equipment contaminated by saliva, blood and other body fluids. SLTs should be familiar with and adhere to Universal Precautions (Blood and body fluid 1984) local and institutional policies regarding the cleaning, decontamination and sterilisation and storage of the equipment, and isolation precautions (Disease Specific and Category Specific). Patients with known infection status should be seen at the end of the VFS clinic if possible and the nature of the infection documented. Appropriate
precautions must be taken if substances hazardous to health are to be used for equipment decontamination.

Sterilisation and storage of equipment must adhere to current infection control procedures to avoid cross-infection of both patients and staff involved in the clinic. Food and fluid portions should be allocated to each patient and disposed of between patients. No food or fluid trial portion must be used with more than one patient. Disposable utensils should be used where possible. Clean utensils must be used for each patient.

- **The use of contrast material**: SLTs must be aware that there may be contraindications, adverse reactions and possible drug interactions with the use of contrast materials and must seek guidance locally. Local guidelines on disposal of un-used examination materials should be adhered to.

- **Resuscitation**: training is required for all Speech and Language Therapists involved in VFS. Regular attendance at training update sessions is essential and will be subject to local statutory requirements. Appropriate pathways must be developed and readily displayed to ensure rapid access to emergency procedures.

- **Identification of previously undiagnosed medical conditions**: it is incumbent on the SLT in discussion with other members of the MDT to report any suspected undiagnosed medical conditions to the radiologist, physician or surgeon responsible for the VFS investigation.

### 3.2 Data protection: storage of Images

Storage of images will be subject to legal requirements as interpreted at a local level. These requirements must be incorporated into the local VFS Procedures document.

### 3.3 Clinical incident reporting.

All clinical incidents including any adverse events directly related to the VFS procedure should be reported according to locally determined protocols.

### Section 4 Professional issues

#### 4.1 Medico-legal issues

It is not within the scope of this document to discuss at length the medico-legal issues associated with professional practice. The reader is directed to documents covering this area.

Communicating Quality 3.
However, the reader should note that, as in all professional areas, the individual SLT’s right to practise in the area of VFS is governed by the regulations of the HPC. The role of HPC is “to safeguard the health and wellbeing of people who use the services of the professionals registered with them. HPC maintains a register of Health professionals who meet the standards for training, professional skills, behaviour and health.” (Your guide to our standards for CPD, HPC May 2006. http://www.hpc-uk.org/assets/documents/1000119FShort_guide_to_CPD.pdf). Adherence to HPC’s codes of practice is the professional responsibility of the individual therapist.

“When an AHP is employed by an NHS organisation, that organisation has vicarious liability for the AHP’s actions. This is in addition to the AHP’s professional accountability to the HPC.” (Department of Health. Practitioners with Special Interests).

RCSLT is the professional body for SLTs. It “provides leadership so that issues concerning the profession are reflected in public policy and people with communication, eating, drinking or swallowing difficulties receive optimum care.” (Communicating Quality 3: 4.1.1). It is the responsibility of the individual SLT “to provide evidence-based services that anticipate and respond to the needs of individuals who experience speech, language, communication or swallowing difficulties.” (Communicating Quality 3: 1.1).

Additionally “RCSLT provides an insurance policy that indemnifies all its practising members in the UK, Channel Islands and the Isle of Man. This covers proven liability arising from alleged professional negligence, breach of professional conduct and damage to property.” (Communicating Quality 3: 4.1.4).

4.2 Medico-Legal Issues: Extended Scope Practitioner Roles

SLT’s “pre-registration, education and later experience...enables SLTs to lead on the assessment, differential diagnosis, intervention with and management of individuals with communication and swallowing disorders.” (Communicating Quality 3: 1.1.1).

In the case of the extended scope practitioner “there are two legal standards applicable to the expansion of the role of an AHP. The constitutional standard (‘the rule of law’) requires an AHP to act within the law. The minimum quality standard (‘the rule of negligence’) requires an AHP who takes on a role or task previously performed by another health professional, to perform that role or task to the same standard as that health professional. It is essential that AHPs undertaking new roles are aware of the legal boundaries relating to their role, and that they have sufficient training and preparation to ensure that they can perform
the role to the required standard. (Department of Health. Practitioners with Special Interests).

SLTs undertaking extended practitioner roles must comply with the NHS employer’s clinical governance procedures. “Each organisation is accountable for ensuring compliance with the implementation of its local strategies and policies at national and regional levels.” (Communicating Quality 3: 1.7.2).

Proof and assurance of this compliance will ensure professional indemnity through the individual’s employer.

HPC states further (Managing fitness to Practice 2006) that if SLTs “move outside your scope of practice, you must be certain that you are capable of working safely and effectively, including undertaking any necessary training and experience……(p 11)

“As long as you make sure that you are capable of practising safely and effectively within your scope of practice, and do not practise in areas where you are not able to do so, a changing scope of practice will not normally cause us concern………. (p 11)

“Your scope of practice is the area (or areas) of your profession in which you have the knowledge, skills and experience to practise lawfully, safely and effectively, in a way that meets our standards and does not present any risk to the public or to yourself. Your scope of practice may change over time, and you should be aware of your scope of practice and make sure that you only practise within it. It is closely linked to your ‘fitness to practise’, but the two are not the same.” (p 12)

For SLT-led VFS clinics, local agreement must be reached and ratified by the delegating radiologist, line manager, clinical governance and legal personnel in the employing organisation. This should take the form of a written document in order to ensure full indemnity cover from the employing organisation, from RCSLT’s professional insurer, and to remain in compliance with HPC regulations. VFS responsibilities must be written into the individual SLT’s job description. (See also Section 1.2 Scope of practice)

4.3 Duty of Care

As with any other clinical procedure, SLTs are subject to the legal requirements of duty of care. “The concept of duty of care sits in common law and is defined as “doing what is reasonable” The definition of what is reasonable is that which a “respectable body of opinion within the profession” would confirm to be so. (CQ3 1.7.7) These will need to be fully acknowledged in local documentation for the practice of VFS. If necessary, legal opinion will have to be sought by the employing organisation.

4.4 Audit and Research

VFS services should be audited on a regular basis within a local clinical governance framework, e.g. waiting times for VFS assessment, compliance with recommendations, adherence to barium sulphate consistency protocols, etc.
VFS offers an opportunity to SLTs wishing to undertake research into best practice in managing dysphagia, including the conduct of VFS. Therapists are encouraged to pursue the developments of an evidence base in this field. Suggestions for possible areas of research are listed in Appendices 2 and 3.

Section 5  Workforce Development, Competencies and Training.

The configuration of the SLT service will vary depending on local factors such as demography, environment, health economy, staffing, resources and levels of expertise. It is recommended that systematic review of individual competencies, service delivery and succession planning must be regularly undertaken in order to address fluctuations and changes in service needs. All SLTs working in the area of dysphagia should have background training in the interpretation of VFS studies to inform their clinical assessment and management. However carrying out VFS studies is a specialist role within a dysphagia service and requires frequent performance of this function and commitment to regular professional development. It is recommended that service managers ensure that adequate resources are in place to monitor and support the maintenance of competencies in VFS in appropriate grades of staff. (Ref: RCSLT Workforce development project (in development)).

The RCSLT VFS Consensus Group has developed an example of a set of Knowledge and Skills Framework (KSF) competencies to act as a guide for clinical and technical skill development for SLTs (these will be available for RCSLT members only from the website). It is acknowledged that there are other models for VFS skill training available at a local or national level that may satisfy local KSF training requirements. The sample KSF competency document is designed to elaborate on the skills that are specific to VFS and therefore does not encompass generic skills that may be incorporated in an individual clinician's KSF outline.

There should be local discussion and negotiation regarding multidisciplinary role boundaries and associated competencies e.g. suctioning, oesophageal stage disorder screening and extended scope areas of practice. It is recommended that SLT services routinely collaborate with other disciplines on training and development, e.g. radiographers and radiologists.

The Consensus Group agreed that it is good practice for SLTs undertaking VFS to participate in wider peer-review activities in order to share knowledge and expertise with SLT colleagues within the service and throughout local/regional networks. These may include a variety of Continuing Professional Development (CPD) activities such as journal clubs, local SLT VFS interpretation peer-review groups, attending or presenting at Radiology peer-review meetings, and peer-review visits to other VFS centres.

RCSLT endorses the development of specialist CPD and training opportunities for VFS such as short courses and Master’s programmes. Resources must be made available at a local level to ensure the development and maintenance of competency in this clinical area.
Section 6 References


Additional relevant documents:


IR(ME)R Consultation 2006:


RCSLT Workforce development project (In press).


### Section 7: Consensus Group members.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organisation</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debbie Begent</td>
<td>Clinical Facilitator, Neurology</td>
<td>Wexham Park Hospital, Slough</td>
<td>South East</td>
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<tr>
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<tr>
<td>Samantha Eckman</td>
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<tr>
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<td>Woodend Hospital</td>
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<tr>
<td>Cathinka Guldberg</td>
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<td>London</td>
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<tr>
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<td>South East</td>
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<td>London</td>
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<td>Helen McLauchlan</td>
<td>Principal SLT, Neurology</td>
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<td>London</td>
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<td>South East</td>
</tr>
<tr>
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</tr>
<tr>
<td>Name</td>
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</tr>
<tr>
<td>Rita Thakaria</td>
<td>Team Leader SLT Adult Community Services</td>
<td>Redbridge PCT / King George Hospital, Essex</td>
<td>London</td>
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</tr>
<tr>
<td>Russell Walker</td>
<td>Principal SLT, Neurology</td>
<td>Royal Gwent Hospital</td>
<td>Wales</td>
</tr>
</tbody>
</table>

**Section 8: Appendices**

- **Appendix 1**  Indications for VFS vs FEES.
- **Appendix 2**  Recommended standards for the Protocol of Oro-pharyngeal Videofluoroscopic Evaluation.
- **Appendix 3**  Recommended standards for the Reporting the Oro-pharyngeal Videofluoroscopic Evaluation.
APPENDIX 1:

Indications for selecting Videofluoroscopic Evaluation of Oropharyngeal Swallowing Disorders (VFS) or Fibreoptic Endoscopic Evaluation of Swallow (FEES).

Below are a number of possible indications for determining the appropriate instrumental examination as suggested in the literature (Bastian 1991; Kidder et al. 1994; Langmore 2003). The RCSLT position paper on FEES (Fibreoptic Endoscopic Evaluation of Swallowing (FEES): The role of speech and language therapy (2005)) should also be consulted.

<table>
<thead>
<tr>
<th>Indications for VFS</th>
<th>Indications for FEES</th>
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<tbody>
<tr>
<td>▪ High risk of aspiration.</td>
<td>▪ High risk of aspiration.</td>
</tr>
<tr>
<td>▪ Evaluation of all stages of physiology in relation to</td>
<td>▪ Evaluation of secretion management.</td>
</tr>
<tr>
<td>swallowing.</td>
<td>▪ Evaluation of naso-pharyngeal and laryngeal physiology</td>
</tr>
<tr>
<td>▪ Estimate of amount of aspiration</td>
<td>in relation to swallowing.</td>
</tr>
<tr>
<td>▪ Evaluating the impact of therapeutic interventions on</td>
<td>▪ Visualisation of altered laryngo-pharyngeal anatomy/</td>
</tr>
<tr>
<td>swallowing physiology.</td>
<td>physiology.</td>
</tr>
<tr>
<td>▪ Upper oesophageal dysfunction suspected i.e. pouches,</td>
<td>▪ Impairment of laryngo-pharyngeal sensation is suspected.</td>
</tr>
<tr>
<td>diverticula.</td>
<td>▪ Evaluating the impact of therapeutic interventions on</td>
</tr>
<tr>
<td>▪ Tracheo-oesophageal fistulae suspected.</td>
<td>swallowing physiology.</td>
</tr>
<tr>
<td>▪ Provision of biofeedback.</td>
<td>▪ Extended examination to measure effects of fatigue.</td>
</tr>
<tr>
<td>▪ Patient medically unfit for or unwilling to participate</td>
<td>▪ Evaluation with real food and fluid.</td>
</tr>
<tr>
<td>in FEES.</td>
<td>▪ Provision of biofeedback.</td>
</tr>
<tr>
<td></td>
<td>▪ Possibility of frequently repeated swallowing</td>
</tr>
<tr>
<td></td>
<td>examinations.</td>
</tr>
<tr>
<td></td>
<td>▪ Patient medically unfit for or unwilling to participate</td>
</tr>
<tr>
<td></td>
<td>in VFS.</td>
</tr>
</tbody>
</table>
APPENDIX 2: RCSLT VFS Policy Statement:


How to use this document:

This document is designed to assist in the development of local policies and procedures for conducting the VFS evaluation in clinical practice in the United Kingdom. The delineation between minimum practice and best clinical practice is one that is likely to change in the future as research evidence and clinical practice evolves. It is acknowledged that the document addresses generic needs of the majority of clinical populations that VFS is used for, and therefore does not replace the application of clinical judgement as to alternative or additional needs for specific clinical populations. More detailed versions of protocols which may address these additional needs are available in a variety of VFS standard texts (e.g. Logemann 1998, Perlman and Schulze-Delrieu 1997, Murray 1999) as listed in the bibliography of the main policy statement.

This document has been developed via a process of review of a number of the aforementioned published protocols in addition to formalised discussion and agreement within the consensus group, and finally a round of wider consultation within and beyond the profession on a national and international basis.
<table>
<thead>
<tr>
<th>FEATURES FOR MINIMUM STANDARD</th>
<th>BEST CLINICAL PRACTICE</th>
<th>AREAS FOR RESEARCH (either for future research or applicable within a research setting)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methodology for conducting the procedure</strong></td>
<td><strong>Methodology for conducting the procedure:</strong></td>
<td>• Standard consistency recipes as described by the national modified food / fluid descriptors researched for replicability and validity for:</td>
</tr>
<tr>
<td>Upright Seating position.</td>
<td>Views undertaken (oblique, supine etc.) if clinically indicated.</td>
<td>- Thin and Thickened fluids.</td>
</tr>
<tr>
<td>Views undertaken (lateral and antero-posterior).</td>
<td>Standard consistency of barium sulphate or other contrast medium (commercially prepared barium sulphate product).</td>
<td>- Puree</td>
</tr>
<tr>
<td>Recording equipment that incorporates audio / sound recording in addition to visual images.</td>
<td>Use of mixed consistency boluses.</td>
<td>- Solid</td>
</tr>
<tr>
<td>First image captured without boluses to assess pre-swallow anatomical features.</td>
<td></td>
<td><strong>Research into measurement of degree of movement of anatomical landmarks during swallow events.</strong></td>
</tr>
<tr>
<td>Use of Omniprope or Gastromiro initially if aspiration is suspected.</td>
<td></td>
<td><strong>Research into pressure measurements as an adjunct to visual radiological images.</strong></td>
</tr>
<tr>
<td>Range of boluses presented; sequence according to clinical judgment –</td>
<td><strong>Methodology of Interpretation:</strong></td>
<td><strong>Research into the efficacy of a 5 point scale to estimate the quantification of oral / pharyngeal pooling and residue such as:</strong></td>
</tr>
<tr>
<td>- Liquid bolus.</td>
<td>- Use of the Rosenbek Penetration-Aspiration Scale (Rosenbek et al 1996)</td>
<td>0 = Nil</td>
</tr>
<tr>
<td>- Thickened fluid.</td>
<td>- Timing of swallow events – Oral and Pharyngeal.</td>
<td>1 = Trace / minimal</td>
</tr>
<tr>
<td>- Puree.</td>
<td></td>
<td>2 = Mild</td>
</tr>
<tr>
<td>- Solid.</td>
<td></td>
<td>3 = Moderate</td>
</tr>
<tr>
<td>Range of bolus sizes in various presentations (i.e. spoon / free flow drinking) in as naturalistic as possible settings (i.e. self-feeding / known carer).</td>
<td></td>
<td>4 = Extensive</td>
</tr>
<tr>
<td>Assessment of aspiration / penetration.</td>
<td></td>
<td><strong>Research into minimal</strong></td>
</tr>
</tbody>
</table>
- Instruction to cough post silent aspiration.
- Instruction to swallow if follow-up swallow not triggered spontaneously
- A variety of postures / manoeuvres employed that could potentially remediate the clinical findings.
- Sufficient time must be allowed to gain patient co-operation, trial manoeuvres, re-position the patient, and challenge the patient to the point of fatigue.
- The examination must answer the clinical question that prompted the x-ray dose.
- Termination of the procedure needs to consider:
  - Large volume aspiration.
  - X-ray dose.
  - Fitness for continuing the procedure (e.g. paroxysmal coughing).

**Methodology of Interpretation:**
- 1st swallow in examination to be rated for pre-swallow pooling (premature overspill) if required to differentiate between pooling and residue.
- Rate the consistency being radiation exposure and digital frame rate (e.g. 7.5 vs. 30 frames per second) for best possible clinical outcome.
<table>
<thead>
<tr>
<th>Evaluated according to level of success and indicating worst feature.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Combination of viewing images in real-time and still advanced.</td>
</tr>
<tr>
<td>- Conferring with more than one trained individual, viewing the images more than once.</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>33</th>
<th></th>
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</table>
APPENDIX 3: RCSLT VFS Policy Statement:

Recommended standards for the Reporting the Oro-pharyngeal Videofluoroscopic Evaluation.

How to use this document:

This document is designed to assist in the development of local policies and procedures for conducting the VFS evaluation in clinical practice in the United Kingdom. The delineation between minimum practice and best clinical practice is one that is likely to change in the future as research evidence and clinical practice evolves. It is acknowledged that the document addresses generic needs of the majority of clinical populations that VFS is used for, and therefore does not replace the application of clinical judgement as to alternative or additional needs for specific clinical populations. More detailed versions of protocols which may address these additional needs are available in a variety of VFS standard texts (e.g. Logemann 1998, Perlman and Schulze-Delrieu 1997, Murray 1999) as listed in the bibliography of the main policy statement.

This document has been developed via a process of review of a number of the aforementioned published protocols in addition to formalised discussion and agreement within the consensus group, and finally a round of wider consultation within and beyond the profession on a national and international basis.

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<th>BEST CLINICAL PRACTICE</th>
<th>AREAS FOR RESEARCH (either for future research or applicable within a research setting).</th>
</tr>
</thead>
</table>
| It is recommended that VFS reports (either in formal or checklist format) contain the following details or headings: | • Joint reporting by dysphagia MDT when supported by adequate inter-rater reliability standards.  
• Reporting of relative duration of swallow events i.e. Measures of oral and pharyngeal transit times, noting consistencies and associated variations.  
• Patients should receive recommendations in a format that is | • Research into inter- and intra-rater reliability of reporting.  
• Research into the impact of quantity and quality of reported data, e.g. impact of recommendations on patient's behaviour.  
• Research into the impact of biomechanical motion information on reporting and |
| 1. Patient identification information |  |  |
| 2. Diagnosis and Medical History. |  |  |
| 3. Relevant feeding history. |  |  |
| 4. Clinical question (purpose of the VFS study) |  |  |
| 5. Views obtained (negative statement required if AP view not obtained, |  |  |


6. Anatomical features / Abnormalities.
7. Consistencies evaluated.
8. Oral swallowing phase
9. Pharyngeal swallowing phase
10. Upper oesophageal sphincter function
11. Results of interventions attempted i.e. Manoeuvres / postures.
12. Aspiration-Penetration (presence, patient response and perceived risk. See section 2.2.3 of position paper.
13. Conclusion / Impression.
14. Recommendations

- When above are listed as a detail / heading – it is recommended negative statements be made in the absence of symptoms e.g. No oral swallowing phase difficulties were observed.
- Report each stage by consistency and worst feature in relation to landmark and in most naturalistic setting. i.e. for thin fluids, significant penetration into the laryngeal vestibule was observed during cup drinking.
- Report use and effectiveness of clearing/follow-up swallows

Recommendations should include:

- Procedures for swallowing therapy
- Consideration of additional dysphagia management factors such as risk to patient (i.e. choking, malnutrition, pneumonia) in the context of patient disease, co-morbidity or likely effectiveness of interventions attempted (i.e. manoeuvres / postures). See section 2.2.3 of position paper.

Recommendations for recipients.
- Tongue
- Velum
- Epiglottis
- Hyoid
- Laryngeal elevation
- Airway closure
- Posterior pharyngeal wall
- Upper oesophageal sphincter
- Oesophagus

E.g. impact of evaluation of anterior hyoid motion for patient outcomes.
- Development of research evidence to support the use of outcome measures in dysphagia for areas such as swallowing efficiency or quality of life.
(spontaneous or instructed).
- Similar features may be reported in groups i.e. Moderate aspiration was observed for all consistencies.
- Referrers should receive written recommendations and impression.

Recommendations should include:
- Optimal oral intake (in terms as described in the RCSLT / BDA guidelines).
- NBM/non-oral/oral/mixed
- Management strategies
- Arrangements for review
- Other investigations
- Involvement of other professionals

Impression should include:
- Severity
- Salient features.
- Functional implications.
- Hypothesis of possible mechanisms of salient features.