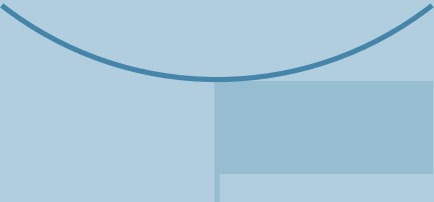




Prescriber Manual Electronic Voice Aids/ Voice Prostheses



**A Manual devised by the SWEP
Clinical Advisory Team to assist
SWEP registered prescribers**





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Background

To enhance prescription capability among prescribers, the SWEP Clinical Advisors have developed a resource manual to provide links to evidence, recommended assessments and measures, potential risks related to client, support person and environment, and links to a range of product types.



Summary of Evidence

Comprehensive voice rehabilitation for those undergoing surgery for removal of the larynx (laryngectomy) may include the use of prosthetic Surgical Voice Restoration (SVR) or non-SVR options such as electronic larynges.

Surgical Voice Restoration


SVR has been a recognised voice rehabilitation option and carried out by Speech Pathologists since its inception in the late 1970's (Blom et al., 1998).

The voice prosthesis used in SVR is a one way valve inserted into the surgically created tracheoesophageal puncture (TEP) that allows air to travel posteriorly into the oesophagus, but prevents the return of oesophageal contents (saliva, food, drink) into the trachea, and thus prevents aspiration into the airway.

After the TEP has been created, it is the Speech Pathologists responsibility to select and fit the patient with the appropriate prosthesis, to teach care and use of the prosthesis and provide ongoing vocal rehabilitation thereafter. It is essential that the treating clinician regularly reviews the laryngectomee patient's TEP and voice prosthesis fit, as changes occur over time and this will decrease the likelihood of TEP complications such as central or peripheral leakage of the voice prosthesis, migration of the TEP or candida damage.

Management of the TEP is a safe procedure when performed with the appropriate equipment. Careful planning and consideration should be undertaken when considering these procedures with patients with impaired cognition, poor vision, reduced manual dexterity and limited access to a carer or significant other who may be willing and able to provide the necessary after care of a prosthesis/puncture.

The range of voice prostheses is changing rapidly with new prostheses, and products to support their use, constantly being developed by manufacturers. In Australia



Blom Singer and Provox are the most commonly used voice prostheses.

Currently, there are two types of prostheses: indwelling which are designed to be cleaned in situ and non-indwelling which can be removed for cleaning by the patient, carer or professional.

Voice prostheses are available in a range of diameters and sizes. The prosthesis lifetime can vary from a few weeks to several months. Lifestyle, cleaning regime, candida and voice use can all affect prosthesis lifetime. When the prosthesis leaks or stops functioning in any way, it should be reassessed by the Speech Pathologist immediately and changed for a new one to prevent aspiration of food and drink into the airway and/or to confirm a patent TEP if deemed necessary.

Electrolarynx:

The electrolarynx is a speaking aid device that, when held against the neck or cheek or by using an oral adaptor, produces sound vibrations that are conducted through the acoustics of the throat and mouth. This sound is articulated by the tongue, lips and teeth into speech.

In prescribing an electrolarynx for individual patients consideration should be given to cognitive abilities, manual dexterity, precision of articulators (lips, tongue, teeth) and ability to maintain the function of the device, ie. battery life. Commonly prescribed electrolarynges include the servox and the nu vois. Both offer different features that need to be considered in determining the most appropriate device for individual patients.

Regardless of voice rehabilitation method, it is essential that Speech Pathologists are aware of the full range of available equipment and facilities to ensure the best possible outcome for each individual patient.



Recommended Assessments and Measures

Voice Prosthesis

Measurement of the TEP length in order to determine appropriate voice prosthesis size should be completed prior to prescription using an approved sizing device.

Clinicians should ensure the TEP tract is stable (for at least a minimum of three months for either primary puncture or primary retrograde placement and minimum one month for secondary TEP) ie. not changing size due to post operative oedema resolving and/or radiation therapy changes, prior to applying for a voice prosthesis subsidy through SWEP.

In selecting an appropriate voice prosthesis, the following should be considered for individual patients:

- Type of surgery and relevant past medical history (TEP site, myotomy closure type, swallowing problems, presence of stricture, reflux, radiation therapy)
- Respiratory support
- TEP tonicity
- Voice quality – open tract voicing
- Sizing for length of prosthesis
- Diameter of voice prosthesis
- Individual properties of a given voice prosthesis
- Indwelling / non-indwelling (patient's self changing abilities or carer available and trained to do it for the patient and cost of the voice prosthesis/self funding ability if above SWEP cap)
- Primary or secondary placement

The following outlines some general considerations in selection of non-indwelling versus indwelling voice prostheses and may assist in your decision making for prescription.

Non-indwelling voice prostheses

Advantages	Important Points to Consider
Patient can be independent ie. Self-change	Must identify problems in a timely manner and seek help appropriately ie. Robust emergency protocols in place
Can be modified easily	Potentially lack of Speech Pathology monitoring
Relatively low cost	Need to tape tab to skin – implications of sensitive skin e.g. post radiation therapy
Hooded end to help reduce aspiration	Need good manual dexterity, eyesight and cognition
Easy insertion	More easily displaced accidentally
Easier access for cleaning	

Examples of non-indwelling voice prostheses

Low Pressure Voice Prosthesis
16Fr & 20Fr



Duckbill Voice Prosthesis
16Fr



Non-indwelling - 17Fr



Indwelling Voice Prostheses

Advantages	Important Points to Consider
Potentially better for those with dexterity, visual, cognitive and alcohol related difficulties with less access to follow-up (aim six monthly review with Speech Pathologist)	Reduced patient independence i.e. clinician change required
Less maintenance	Requires access emergency care if on holiday i.e. emergency plan in place
More independence – less frequent Speech Pathology visits	Potentially increases hospital attendances as relies on Speech Pathology review for changes etc.
Less initial training	Potential for difficulties with cleaning/movement on cleaning
Flat profile	Flanges may be too large to be accommodated by narrow trachea / oesophageal lumen
No tab to tape to skin – allows for Heat Moisture Exchange (HME) or Hands Free Speech to be used	Cost – need to weigh up cost benefit/ efficiency of voice prostheses
Regular Speech Pathology monitoring for potential complications	Requirement for regular antifungal management to prolong device life
Larger flange	

Examples of indwelling voice prostheses

Indwelling voice prostheses 16Fr



Indwelling voice prostheses 17Fr



Electrolarynx

Selection of an appropriate electrolarynx where possible should be based on a trial period whereby the patient has had the opportunity to practice with the available device (with or without an oral adaptor) prior to recommending and completing a SWEP application.

Electrolarynx examples

Nu-vois



Servox



Relevant Client Characteristics

- Adequate cognitive function for use, maintenance and appropriate care of voice prostheses
- Adequate vision for cleaning of voice prostheses. Adequate vision also essential for those completing self changes of non-indwelling voice prostheses.
- Adequate manual dexterity required for cleaning of voice prostheses and where appropriate those completing self changes of non-indwelling voice prostheses.
- Manual dexterity also required for optimal use of electrolarynges.
- Motivated to use the communication device

Relevant Support Person Characteristics


- Support person/carer must be available to assist with the patient if they are unable to clean/maintain their own voice prosthesis.
- A support person/carer is also essential if the patient has a non indwelling voice prosthesis insitu that they wish to self-change however don't possess the relevant client characteristics to do so and / or are unable to attend regular Speech Pathology review for voice prostheses changes.



Relevant Characteristics in the Environment

- N/A

Product range and when they might be prescribed

- Refer to the links provided below for Provox, Blom Singer and NuVois.
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Implications of non-provision

Non-provision of an electronic voice aid or voice prosthesis may have many implications for your patients including those related to safety, independence and health maintenance. Information to assist the SWEP in prioritisation of funding allocation and equipment provision is based on the use of a priority of access matrix. This matrix assesses the likelihood of occurrence against consequence of occurrence and enables SWEP to determine allocation of resource to ensure minimal risk to our patients where possible. For SWEP to prioritise appropriately and manage your most urgent requests in priority order you must include the likelihood of the consequence in the implications of non provision in each of these sections on the prescription form. Without information such as “Will happen within 1 month” or “1-4months” or “may happen in 1-4 months” SWEP will not be able to allocate an appropriate priority and wait time.

The following examples may assist you in your application for subsidy through the SWEP.


Safety (Physical)

A leaking voice prosthesis will result in immediate aspiration and risk of further medical complications e.g. aspiration pneumonia necessitating hospital admission. The likelihood of this occurring for the patient is imminent (will happen within 1 month).

A non-functioning voice prosthesis or electrolarynx will result in inability to vocalise in the event of an emergency e.g. use phone / call out for help. The likelihood of this occurring is imminent (will happen within 1 month).

Independence (Level of Care)

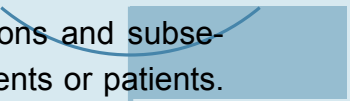
Inability to vocalise will prevent the patient from working and / or participating in various community groups e.g. volunteer activities, Rotary, Lions club. The likelihood of this occurring is imminent (will happen within 1 month) or Likely (May happen in the next 1-4 months – e.g. if have a department loaned electrolarynx however this is required to be returned).



Being unable to vocalise when living alone and independently results in inability to meet own basic needs e.g. communication for shopping, public transport and emergency situations. The likelihood of this occurring is imminent (will happen within 1 month).

Health Maintenance (Psychosocial)

Inability to vocalise results in reduced participation in social situations and subsequent withdrawal from interactions with family / friends / other residents or patients. The likelihood of this occurring is likely (may happen in the next 1-4 months)



References, Further Readings and Resource Links

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Blom Singer: <http://www.mainmed.com.au/Inhealth.htm>

Provox: <http://www.atosmedical.com/>

Nu Vois: <http://www.mtnprecision.com/>