**Introduction - WHICH BEASTIE? THE THOUGHT FLOW CHART**

In general we follow a Flow chart of technical and practical thoughts within a very short time space – mainly on automatic pilot.

We use our Training and are guided by our Professional Protocols and Procedures (BSA recommendations).

We have the odd "scratchy head" times where we have to stop and think but on the whole we decide on our moulds without much effort.

Personally, I think it is such an important decision making process in essence, as it may mean the difference between the patient accepting or rejecting the Hearing Aid on grounds of cosmetic Non-elegance or comfort. Or contact skin reactions and allergic conditions that make it a sore, painful experience that can quickly either deter or prevent Hearing Aid use and the ability to access clearer hearing and effects on every day quality of life.

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Audiologists do choose moulds with a holistic decision making skill.

**What Clues do we use?**

Broadly speaking we make our choices on the following points:-

The Patients Audiogram
Type of loss - Sensori-neural loss V's Conductive loss
Static loss V's Fluctuating Loss
Power of loss-how good or bad is it?
Shell or Skeleton mould or other
Software targets
Vent size, Tubing Specification, Filters
Acrylics or Non Allergenic materials
Ear/skin condition & pre-dispositions
Anatomy of the ear
Ear Canal size-available space or contour for the required vent/tubing
Patient preferences (as far as above will allow)
Patient dexterity of fingers, hands, arms or shoulder
Patients Vision-what can they see or feel?
Patient Appeal and tactility
Costs
Manufacturer

*Easy peasey! But is it?*

It is quite interesting to hear views of those not involved in clinical choice and that of new students with the amazing and bewildering array of codes (EM2107 etc) and rising, the variety of choice of materials available to our needs and styles!

But, we make these choices in a very short space of time- how and why?

Initially, the choices are made on a very much prescriptive and technical basis, but with experience, skill and confidence of what can and can't be done we automatically take a more holistic overview of our patient and their needs.

In Analogue days we 'eyeballed' the audiogram and requested the appropriate technical venting.
We still do so to date, for those who are unable to perform audiometric testing (e.g. Dementia, Stroke), we still 'best guesstimate' audiograms and vents required derived from voice testing and assessments.

But, nowadays, with the advent of Digital Hearing Aids and their Software programmes, most of the fun and hard work has been taken away in general terms as all the Formulae and Maths is automatically done for us!

Digital Hearing aids are now far superior in hitting their targets and delivering 'the patient needs'. Far more flexible and tolerant and not so prone to produce the dreaded feedback, if it occurs the feedback managers actually manage it!

Audiological choice of moulds and hearing aid models across the Power range is now so much simpler, but it also gives us broader choices and greater flexibility!

**Sherlock Holmes with an Auroscope?**
**THE TECHNICAL DECISION – SELECTING VENT, TUBING, FILTERS**

Starting with the Audiogram i.e. The Patient's Auditory Threshold:-

We view the level of loss and the power of the hearing aid to be used.
Let the software 'plot' the course (thank you NOAH!), let it do all the work…….press CONFIGURATION and read off the suggested Target vent size, Tubing options and filters.

The *Choice*: - either alter vent, Tube, filter at prescription or order Target suggestions.
*Why?* :- Looking at the audio tells us whether it is:-
a) Sensori-Neural type loss in which there will be no need for altering the vent size from target.
b) Conductive in element with pathology, in which we may need the largest vent possible

c) Loss fits generally a lower power model but with change in tube (Killion Horn) or filter we can alter the overall output to fit totally without a stronger model.
d) Stable conductive e.g. otosclerosis vent as per target
e) Fluctuating conductive e.g. sinus, catarrhal middle ear problems – vents can be adjusted to accommodate for the changing hearing level and target. Vent selection may be chosen for the 'average level of loss estimated' and volume control/programme required– usually obtained by patient history. If the hearing drops, power increases and vent size reduces.
If the vent is too large for the poorer hearing levels we can end up in feedback areas.
Too small – occlusion.

f) Conductive loss with WET ear or meatal conditions (e.g. eczema, psoriasis). These are usually not new hearing aid users, but those who have developed ear conditions over time and now need managing rather than removing the hearing aid. The aim is for AS LARGE A VENT AS POSSIBLE!
For new users who may have a predisposition to either middle ear of meatal conditions, I am a firm believer of increased ventilation/aeration to the ear to help maintain dryness and good Dermatological skin condition in the battle to aid reduction of these problems, both for patient safety and comfort.
g) History of or Dry Mastoid condition-again AS LARGE A VENT AS POSSIBLE to remain 'safe'.

Analogy:- if we soak in a bath for too long-our skin looks like a soggy wet prune. The same could be applied to a wet and soggy ear canal. Any little bugs and bacteria, natural flora & fauna (eg staph aureus, pseudomonas, fungals') love the warm moist conditions and 'whooppee-whooosh' off they rage to an ear infection…..so as we know "happy ears are dry ears".

How do we manage this choice of venting and what can we get away with?

Either by a)'Select-a-vent….let the patient change if nimble and able b) take the average and best venting possible for loss c) do 2 moulds with different venting for patient to interchange as required (change the plumbing changes the sound).

What might we need to compromise regarding vent, space or tubing for these types of losses?
Do we compromise on the Software programming, the Mould or do we innovate or a bit of both?

## EFFECTUS DOPPLERICUM ET ASSISSTUS AURELIS

i.e. The Doppler Effect of a Hearing Aid or Feedback alias 'whistling' (not in the wolf whistle variety!)

The rise and fall in sound which we can hear before we see where it is coming from eg the patient in the waiting room on repair clinic.

The dreaded feedback scenario and how to choose the mould and venting to avoid this like the plague! Some ears are just not helpful or conducive to very snug fitting moulds with No Vents!

How many of us recall the Hearing aid user experiencing feedback? Especially in the high power hearing aid users?

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Soft acoustic materials without venting and long meatal lengths were the order of the day.
Put the mould in the ear and hold it firmly until the patient was through the door before letting go in fear of 'the whistle'!

Nowadays our choices are greatly improved with the advent of larger venting tolerances. Less need for soft and shell varieties in more levels of losses than before.

Feedback Manager software available when required has made our choices of earmould a playground for our patients preferences and comforts. We can choose much finer, more open or larger vented styles with higher power output and lenience of a snug fit in the ear.

It is now a question of "how much can we get away with for comforts and preferences?"

Many patients say "oh, I do wish we could take you and the computer home with us to stop the whistling". A vision of our patients walking out of the door with their 'tools to hear' still attached to the shoes & wires with Auricle and computer in tow springs to mind!
With all confidence we can mostly say "it's ok now".

## TO CHOOSE EIHTER SHELL OR SKELETON OR OTHER STYLE

This is dependant upon vent size allowed and level of loss.
The lower/lesser the loss and larger the vent and smaller the mould required before feedback may kick in i.e. a skeleton or OPEN mould which is even more well defined and less obtrusive.

Cosmetically, skeletons are more patient friendly and aesthetically pleasing for their looks.

More comfortable as they are lighter and allow more aeration to the ear.
But, do we also choose a skelton for a high power loss? Yes, if preferred and we think we can get away without feedback-but also more importantly if there is any history or skin condition noted in or around the area to request a 'Concha Vent' (8mm vent straight through the moulds' concha bowl). This allows some evaporation from the skin surface and helps to keep it dry and less irritated/inflamed.
Shallow thin moulds can be difficult to remove. Deeper chunky moulds can protrude and look unappealing.
The Anatomy of the ear impacts on the style of Earmould chosen.

## SOFT MOULD MATERIAL, HARD OR MIDDLE OF THE ROAD?

In general **Hard acrylics** are the first port of call for general provision unless our patients are Children.
Look cosmetically better-Patient acceptance is higher. Easy to wash and dry. Keeps the pristine look for an indefinite time without staining or splitting.
Tubing retention is superior and does not slip so readily.
Not so many 'lost hearing aids' due to tubing slipping out of mould and hearing aid falling off the ear.
Easy material to conduct Mould adjustments and polishing in the Clinic
Cost effective for Departments as they last for longer.

**Soft acrylics** are the next pit stop.
For High power losses and acoustic fit
Comfort fit to those with delicate ears or TMJ (Temporal Mandibular Joint) problems or movements
For those prone to bumps and falls (to help avoid potential injury from impact trauma)
For Children

For those with Dermatological reasons e.g. Rodent ulcer, Squamous cell changes or sensitive surgical sites and neuropathy in and around the ear and referred pain sites.
Weight loss or weight gain in patients-soft materials tend to be more accommodating.
Need to renew every 18 months approx for adults as material deteriorates.
Tendency to discolour and not so easy to maintain good condition especially with waxy ears.

**Half & half** i.e. Hard body and Soft meatal tip for those who would benefit from the cosmetic look of Hard acrylic body externally but the acoustic fit and comfort flexibility in the ear canal.
There is awareness of potential weakness at the joint of two different materials in case of break away or very heavy handed patients causing strain at this joint.
Need to renew moulds regularly and monitor mould condition.

## MATERIALS

**Vast choice……how do we select?**

For the majority with robust skin condition and 'normal 'ears, Standard Acrylics are ideal.
Either style or material of mould is suitable subject to considerations already mentioned.

Soft Silicones and Micrpores tend to give rise to smaller than requested vent sizes as these either collapse (or are difficult to drill at manufacture(?)- (what we get back is not always what has been asked for on the tin) or it collapses/shrinks from expansion of material to warmth whilst wearing in the ear.
But they do give a comfortable fit and breathable element to the ear and are very biocompatible.
Provide excellent acoustic properties for the higher power losses.
Very difficult in most cases if not impossible to adjust in the clinic- so do we think there will be a need due to the anatomy?
Shells still can make concha bowls very sweaty and give rise to the very reddened, shiny and itchy dermatitic changes and yet not aggravate the canals as in true contact reaction to material.
Choice could be skeleton style – dependant on dexterity or vent the concha bowl without loss of acoustic seal. We could choose to request a slightly larger vent size or an alternative more rigid material, or alter software targets upon mould return or adjust by drill our own vent sizeing?

Soft moulds deteriorate and the sound tube bores become very lax and start cracking-tubing then starts to slip and give difficulty with retubing.

Avoidance of Silicones, Biopores, Micropores for those who tend to consistently pull on the tubing to remove the mould unless ear condition dictates otherwise as tube slippage is inherent unless tube locks are inserted.
This creates future retubing difficulties in the repair clinic..
Meatal tips subject to splitting and cutting from scalpels at retube time. New moulds more frequently replaced.

Soft Non-allergenic acrylics (VSA or UV Non-al coated) tend to be robust and easy to vent and adjust.

Tubing does not slip easily

Softness or hardness of moulds can be varied (called shore i.e. jelly bean - 35, toffee - 45 or opal fruit - 75 stiffness grade). Very soft 'jelly bean' material can be very comfortable but delicate and somewhat difficult or impossible for those with dexterity and manipulation problems.

Standard soft acrylic material can degrade and 'leech' over time when exposed to a continuous wet ear, causing skin reaction, therefore consider change to an alternative non-allergenic material.

Standard soft Acrylics and VSA materials are usually cheaper than Silicones & Micro or Biopors therefore, a more popular initial choice. Chosen especially if there is not a true allergic reaction to materials.

Hard Clear Non-cadmium or other hard non-allergenic's are quite often more frequently chosen for cosmetic looks, long life, easy cleaning and high quality adjustments in clinic..
Cheaper and very efficient.
Easier to adjust and polish in the clinic.

Ears that may suffer dermatitic allergic symptoms, rather than 'true' contact allergy reactions or topical skin changes only due to the length of patient wear (e.g. overnight too) and natural mould degradation, predisposes our consideration to a durable non-allergenic material as matter of course e.g VSA's, Hard Non-cads, Non-al coatings.

These varieties tend to be a very popular choice in clinic.

The choice of mould impression material and Non-allergenic materials, Cleaning and Hygiene should perhaps be a prime consideration?
Is there a need to increase our Professional awareness in practice to choose the most compatible materials for **each** individual patient and ensure their knowledge in maintaining earmould hygiene in light of **the *first Fatality as a direct link to Mould impression taking?***

*Reference Telegraph and Argus Coroners Newspaper report. This was linked to a rare reaction to the silicon-based material. The subsequent allergic rash was "a contributing factor" to the Pneumonia that killed Mrs. Hibbbitt. "She would not have died if she had not reacted, unexplainably, to the material that was used for the mould for her hearing aid". Pathologist Faisal Ali.*

Should this raise a question over any allergic reactions in or around the ear from materials or inflammation of the ear that occur giving rise to an increase in bacteria?

## NON-ALERGENIC CHOICE OF MOULDS AND MATERIALS

Chosen from patient history: - either ENT clinical assessment history or direct from patient as to any pre-dispositions or aggrevants for each patient e.g. Plastics or Silcones, Salycilate allergy-very rare.

Or as assessed by Audiologist upon visual inspection of the ear, outer ear, surrounding skin condition or evidence of surgery or pressure sore areas prior to the mould impression taking.

Review Non-allergenic materials and their properties subject to patient return to Hearing Aid repair clinics with symptoms.
Review Non-allergenic materials, their properties and provision subject to referral received from ENT or Dermatology Consultants when conditions arise.

Decide most suitable materials to cope with wetness and microbial flora (best antimicrobial property) or most durable for cleaning purposes.

Choose most robust material to cope with instillation of treatment medications-drops or sprays or rigourous cleaning..

There is a vast variety of biocompatible materials-we work through the list. If a patient is very symptomatic we can choose to conduct a skin patch test before ordering the highest biocompatible and most expensive of moulds….GOLD.

Soft property materials tend to be very acceptable and biocompatible to those sensitive to touch or pressure e.g. Cartilage irritation, TMJ or bendy canal pressure areas, arthritic (relapsing polychronditis), surgical conditions, Dry safe ears and mastoids or those with perforations.
Some patients though find some soft non-al materials may exacerbate sensitive skin conditions e.g. eczema, psoriasis, otitis externa, (especially in the concha bowl) or safe mucoid discharge in the canal.
Choice is made for Skeleton, Concha Vent and as large a meatal vent as possible in non reactive/inert material. This combination can prove kinder on the ears.
Others may find the harder non-allergenics e.g. Non-cadmium just as biocompatible – if not more so.
Easier to handle. More pleasing to see and not so chunky.
Durable & easy to wash and MOST IMPORTANTLY EASY TO WASH FREQUENTLY AND EVEN MORE SO – TO DRY.

Biopors and PVC's tend to have both properties and contain tensile Non-tear characteristics and cover all needs. More expensive and sometimes slightly chunkier in the ear.

**THE WHOLE PATIENT**

What will the Patient readily accept as our choice of mould?

Something that is pleasing to the eye and tactile with good colour and comfort is the aim.

Acceptance and habilitation is all important to avoid the horror of "I'm not putting that in my ear!" and ending up in the drawer.

Therefore we ask ourselves "What is the best mould specification for the Patient, in shape, material or style?
What can they manage and maintain best?

**PATIENT MANAGEMENT – HANDLING THE MOULD ITSELF**

What can the patient 'see'? What can they 'feel'? What can they navigate?
What are the patients handling and management of maintenance abilities?

Patient dexterity and manipulation determines choice of shell/skeleton/claws/meatal pip/tubing or elbow.
Very seldom do we request Elbows now due to loss of sound quality, breakage at glued joint and more unsightly.
Shells tend to heave less 'geography' to feel for those who have arthritis, Dementia, problems with grip or lack of feeling in the periphery finger tips. May be easier to lever and grip the mould.
They are sometimes easier for those with Visual Difficulties or Registered Blind to navigate and 'see' the mould for insertion i.e. 'put that bit in your ear' or extraction.
Others may find a skeleton with greater cut away easier to grip, hook or feel the 'tea pot handle'
We assess Ear Retention or 'lack of' retention properties for each individual ear e.g. ear very shallow – mould slips out and is too bulky, or the ear is very deep - difficult to lever out of these retention areas.

**We appraise Age and ability**:-

Are they:- Young? Children or Adult? School and play? Working? Able? Active social life?
Occupations and sporting hobbies can all impact on materials and specifications.
Hot or very cold working conditions or sporting activities can give rise to increase in condensation and humidity problems in the ear. Consideration is given to venting, tubing (stay dry) and biocompatible materials to help minimize certain clinical conditions (e.g. Otitis externa etc)

Babies and Children we aim for soft varieties to cope with the rough and tumble of the day in case they bump heads or -the least bruising trauma from impact to the ear and in the elderly in case of slips, trips or falls. Full shell for comfort and scope to manage the changing physiology..

Young Adults - Aim for the smallest least obtrusive style of mould…….usually nimble fingers.

Are they Older but active and the same above applies. Is there for example, any arthritic history etc?
The aim is still for least obtrusive, but maybe not quite so fine on a cut away mould or aim for a finer CLAW with less anatomy to insert into ear or flick it out…..but this is still dependant on the power of loss needed.

Very Elderly or those with increased level of difficulty-either physical manipulation of the mould or Mental difficulties such as memory loss, dementia, Alzheimer's, loss of arm/shoulder movement (Arthtitis, Stroke) that restricts the ability to reach the ear on the side of issue or having to use the opposite arm to fit the hearing aid in the opposite ear, may benefit more from Shell styles for increased grip and size.

Severe handicap due to Mental Illnesses and Physical demeanor or where our patients are in Nursing Care dependency or likely to fiddle with the moulds and remove them at every opportunity, we aim for shells as they are 'easier to spot and locate' before they hit the laundry! And some Carers find the mould care and insertion easier for them to manage.

These appraisals indicate the overarching need for design and specification.

## CLEANING AND HYGEINE

Children's moulds tend to be outgrown before tubing hardens to make removal for washing difficult or the soft materials degrade.

Washing tends to be more straightforward and Mum's and Dad's do this as part of the general household routine, same as 'washing the kids clothes'.

Adults are either very organized in changing the tube every 6/12 prior to tube hardening or religiously wiping after earmould removal or do not do it at all.

Standard tubing is usually more easily removed from the hearing aid washed, scrubbed with a toothbrush, flushed, cleaned and dried.

Soft materials: - Washing tends to be more difficult with time as the material stains from natural wax and the material hardens with time. Drying needs to be slightly more fastidious especially where canal or middle ear conditions are prone.

Hard Materials: - Tend to wash and wear without changes as above. More resistant to meatal tip nibbles from 'picking' the wax out with a pin. Last longer with good looks. Carers and Relatives are more inclined to touch and clean when the moulds look nicer! Easy to dry.
Often this material is more favourable.

Need for Cleaning and hygiene regimes especially in ears with clinical conditions or predispositions to minimize risk of infection and more serious complications

## MOULD ADJUSTMENTS IN CLINIC-EARMOULD ENGINEERING/SURGERY

### What equipment do we have available to us in our different departments?

For those lucky, like we are, we have both Buffer/Grinder with ventilation cabinet and an Industrial High power hanging drill- Variable Low to High speed with high Torque to cope with most materials without problem.

Saves both time and money! For departments and patients alike. Saves on unnecessary returns for mould adjustments, Audiologist and Departmental time.

It is a fascinating and fine skill to make these changes.

When do we need to make adjustments?

Either to increase vent sizes to required targets.

Change tubing from standard to Killion (Libby) tubing

Comfort adjustments on Meatal tip, along the canal wall (TMJ movement or arthritic jaw involvement), around the crus or around helix to alleviate or prevent pressure sores.

Adjust moulds for cosmetic reasons of any unwanted prominence, carve under the helix or around the tragal notch.

Adjust for manipulation difficulties eg. to insert mould over prominent Tragal or anti-tragal notches, under deep anti-helix-possibly due to either very rigid or very floppy cartilage to suit fine motor dexterity of patient.

Allow for 'glide' factor for easy and comfortable mould insertion/extraction e.g. Round off meatal tip rather than square prominent end.

Repair and polish Patient damage.

If we have any indication that our patient may warrant this in future or has had problems in the past- AIM initially for a material than CAN BE ATTACKED READILY IN CLINIC.

## INNOVATION, CUSTOMISATION DEVELOPMENTS

Or another 'scratch-the-head moment'?

Inventedness or change usually comes about when needed with confidence and experience of what is available and what can be done. As Audiologists we learn and make advancements from trial and error.

Eg Wendy's Dusty Bin (knick-named by a fellow Audiologist with a sense of humour!).
This is one of mine that I will live with and be known by for some time!

History: - Requested by a Consultant Hearing Aid user who needed to use his Amplified Stethoscope without continually removing his hearing aid.

Loss-Bordering moderate hearing loss, but would allow feedback with a vent large enough to entertain adequate stethoscope sounds without feedback when not in use.

Designed by one of our Manufacturers with great consideration and technical feature of securing the 'lid' to contain feedback.

Grand Design but maybe not as cosmetic as to be accepted by the wearer in public. (The consultant did not return to clinic for issue of his hearing aid either so he had NO idea of the final fashion).

The idea would have worked in practice. Without these efforts we would not advance.
This mould was an attempt from about 15 years ago now…….technology and designs **have** moved forwards!

Malformation and awkward ears sometimes call for insight and innovation eg case example below

How much improvement and patient satisfaction is to be gained is still out to the jury until its fitted.

Too many innovative errors can be costly. Innovation or Customisation if we get it wrong does not justify the benefits or costs and is not trialed again.

Too many financial errors are trouble with a capital T in this financial age!

Success can be so worthwhile when successful for both patient and technological progress, plus a feel-good factor for we Audiologists!

**A MOULD OR NOT A MOULD TO CHOOSE?**

Innovation and developments have now given Audiologists even greater choice.

The advent of the ***Microbore Tube***! Microbore tube V's Standard Moulds

Super Cosmetic Elegance in design

Open ear feeling and lack of occlusion

Patients love them for both looks and comfort in the main

**Huge increase in popularity**

Suitable for Low power and High Frequency losses that we could not successfully fit for sound quality or enrichment (tinnitus sufferers) before

Disposable Ear fitments in lieu of moulds

Easily fits and sits on top of previously 'challenging' ears due to shape and structure

Easy to insert – very simple to remove

No Earmould adjustments

Disadvantages for choice:-

Does not suit all hearing losses

Sometimes difficult for some patients with dexterity or grip problems-mostly on insertion

Not recommended for very waxy or wet, discharging ears.
Referencing the MDA Clinical Safety Notice for Phonak microbore tube **not** to be fitted in wet/discharging ears, as the domes have been found to slip off into ear canal/middle ear which may require surgical removal.

Not easily manageable for those with Visual Difficulties or registered Blind who have no-one to check for blockage and clean the fine tubing for them.

Not easy for those with lack of grip and fingertip feeling to remove tubing to clean without 'nail nipping' or compressing the tube

Without being able to wash these attachments, some eczema or psoriatic conditions may require more regular renewal of piping and domes

More frequent changes for clinical reasons and tube/dome damages are more costly.
In an ideal world where Cost is NOT an issue, we would treat these *as disposable* and not have these concerns.

But where Cost IS a consideration and Clinical decision of provision X Patient numbers = Cost implications,
We do have to sometimes think of the overall merit and worth to the patient as to whether the ongoing costing are valid and effective.

We assess the choice of 'to choose-or NOT to choose'.

**STRETCHING THE BOUNDARIES**

As Audiologists we constantly look to stretch the boundaries of fitting ranges without feedback to suit our Patients.

We have access to the HYBRID Microbore Earmoulds now i.e microbore tube attaching to standard Earmould.
Hugely more cosmetic, but patients can find this style not quite as streamline in the ear and easily caught by hand.

But, as we are also finding success in fitting the slightly out of target Microbore tubes in Low frequency area without compromise, it is encouraging and we are giving greater consideration in our choice of the appropriate mould.

## EARMOULD IMPRESSION MATERIAL

We use the materials and methods of individual Audiologist preference of use alongside the need for the different properties of Mould Impression geography and lack of shrinkage properties.

We can choose to use a material readily markable with chinagraph pencil if we need to highlight specific regions for manufacturing purpose.

Choose most compatible material for patient impression taking.

After all, the final Earmould produced can only be as good as the Mould Impression produced at Audiologist source and the skill of the Earmould Lab..

## MANUFACTURE TURNAROUND

Mostly standardized, but can be swings & roundabouts due to increase in manufacturing demands.
Holiday rest periods.

Some can turnround quicker 'urgent/24hr' moulds especially if they are unusual or 'speciality' moulds.

We consider using an alternative supplier in our choice of moulds if one has longer processing times than usual and either patient or waiting list targets cannot comply. This may mean considering a slightly different mould material.

## MANUFACTURE OF CHOICE

NHS Hospitals vary I believe in who and how many tendered contracts are accessible.
Some Hospitals have only one tendered source.
Others have a variety of choice to suit the need.

We develop our favourites!

Manufacturer's returns of mould quality affect our future choice and selection.

First choice is a) Standard mould provision at most cost efficient supply
b) Greatest provider of both cosmetic and patient comfort fit at the most cost efficient supply.

Different materials and techniques by different manufacturers produce varying degrees of quality, contour and comfort fit for our patient.
We can always tell a 'new starter' V's the seasoned lab technician. If we receive consistently poorer standards of custom and fit which means an increase in adjustments, we veer to an alternative outlet until the problem resolves as this only increases time, costs and efforts for both Patient and Audiologist. Plus we are on the coal face for Patient anxieties and complaints.

c) Good and consistent turnaround time.

It is not always speed of turnaround but keeping the contractual service agreements with consistent quality.
We expect no more than our waiting lists and targets demand. But if an URGENT one is required, we choose the most compliant and supportive manufacturer, subject to choice of materials and quality provided.

d) Logo & colour moulds for kids and the big kids-use manufacture attached to the variety of Patient choice.

e) Ability to adjust material of choice subject to manufacturers availability

f) Non Scalpelled mould impressions at manufacture!

g) Avoid recurrent Manufacturing problems until resolved

Eg: current experience is for a particular soft 2109 to tear in exactly the same place (? manufacture weakness).

h) Smooth and accurate finishing

Same or similar mould materials are available from different sources at differing price structures…we tend to use more cost efficient supplier if material and standard of the item is of comparable quality unless we have a specific reason to ignore cost.

Different Manufacturers use a variety of different raw mould ingredients from the suppliers of their choice-this can give greater flexibility of choice to a patient who has a contact reaction to find a suitable product in both skin tolerance and costing to the department.
As Audiologists we find supply of a same EM2109 (non-al skeleton) can provide different properties from different manufacturers due to the base ingredient-so we choose to suit our patient.

i) Choose supply within an acceptable costing driver.

## CONCLUSION

Audiologists Follow the Flow chart with considerations for the best design, best comfort, safest material for ear condition at the best most effective costs for the patient, with the least possibility of feedback or problems arising to activate a premature return to the Hearing Aid Repair clinic.