



PAEDIATRICS

**A NATIONAL MODEL
OF CARE FOR PAEDIATRIC
HEALTHCARE SERVICES
IN IRELAND**

**CHAPTER 25:
PAEDIATRIC ENT
(OTOLARYNGOLOGY/
HEAD & NECK)
SURGERY**



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25.0 INTRODUCTION

ENT (otolaryngology / head and neck) surgery is a highly specialised area of surgery, and paediatric ENT surgery accounts for up to 40% of most ENT surgeons' workload in the Republic of Ireland. It is a specialty marked by high volumes of referrals and, currently, by long waiting lists. This is mainly due to lower than recommended staffing levels particularly at consultant level. In other words, demand far exceeds capacity.

While Comhairle na nOispidéal (2005) recommended consultant levels of one per 80,000 with appropriate support services, current resources are behind these recommended levels and consultant numbers are currently in the region of one per 120,000. In addition to a deficit of ENT surgeons at national level, a particular crisis occurs at tertiary subspecialty level in the area of paediatric ENT surgery. It is important to highlight this to give context to the current provision of services and plans for the future.

The scope of ENT practice encompasses:

- General paediatric ENT (in either healthy children or children with co-morbidities)
- Paediatric otology
- Paediatric rhinology
- Paediatric airway surgery: endoscopic assessment and surgical management of paediatric airway conditions
- Paediatric cochlear implantation
- Paediatric head and neck surgery

25.0.1 Specific Areas of Specialisation

Paediatric Airway Surgery (Elective and Emergency Management)

This is a complex part of the ENT service. It includes acquired and congenital tracheal stenosis. Severe tracheomalacia is encountered in some preterm infants and presents a major clinical challenge. The surgical assessment involves endoscopic assessment and sometimes stenting, tracheostomy or other definitive surgery. The management of children with serious tracheal disease in childhood is primarily concerned with the treatment of long segment congenital tracheal stenosis (and its associated [60%] lesions), severe tracheo-bronchomalacia and a variety of other, rarer pathologies. These children are a major medical and nursing challenge and some spend many months in hospital. The situation surrounding paediatric tracheostomy continues to be problematic with significant issues in relation to their aftercare, in particular to the care of the tracheostomy care in regional hospitals. Home care packages are the key to increasing patient flow yet problems continue with significant delays in this area. There is merit in the area of management of paediatric airway conditions to having specialists who only/mainly work with a paediatric population as this area of work is unique in that the endoscopic assessment and surgical management of paediatric airway conditions is quite different to that of the adult population.

There is an growing workload related to increased diagnosis prenatally of foetal abnormalities, increased workload originating from a nationally provided paediatric craniofacial service (previously this service was dealt with by Great Ormond Street Hospital) and increased expectations of survival of preterm infants born with increasingly challenging conditions means there is an urgent need for recruitment in the areas of either fulltime paediatric otolaryngologists or those with an interest in paediatric otolaryngology to deal with the increasing demands in the area.

It must be stated however that if one is going to restrict the management of such conditions to purely paediatric otolaryngologists then the number of these appointed needs to be greatly increased to be able to provide a standalone emergency on call service. There is currently just one fulltime paediatric otolaryngologist in the country and the service is currently relying on a small number of otolaryngologists with an interest in paediatric otolaryngology to provide this service. Long term management of paediatric airway conditions and stable airway emergencies certainly benefit from being centralized, however some paediatric airway emergencies are not stable – these can present to any of our regional units and there may not be the time to safely transfer or to deploy a retrieval service. It is essential that personnel in regional units remain up skilled in the event of an unstable airway emergency presentation.

Paediatric Otology

The introduction of neonatal hearing screening has resulted in an unprecedented pressure being placed on services which are already stretched. While the introduction of the neonatal screening service is a welcome development, it was not matched with any increase in consultant numbers but has resulted in increased referrals to the service. All babies who fail their neonatal hearing screening are referred on to ENT services which add pressure on an already overloaded system. There is an expectation that because a possible problem has been picked up by early screening that an early appointment will be forthcoming, however without increased resources this can only be provided at the expense of other children with actual problems diagnosed by their GP who have been waiting an unacceptably long period already. With advancements within the other areas of paediatric otology, there is an increasing need - partly due to the increased demands from the neonatal hearing programme, but also with the advent of the BAHA programme to bring us in line with the rest of Europe.

Paediatric Cochlear Implantation

For profoundly deaf children, the national cochlear implant programme (separately funded) has provided excellent results since its establishment in 1995. The programme was established in Beaumont, but the paediatric surgical component (under 6) of the program has now moved to Temple Street Children's University Hospital (Temple Street). To date over 400 children in Ireland have had a cochlear implant. The HSE allocated 3.2 million euro for bilateral implants in 100 children in 2014.

For best results, infants should be fitted with hearing aids by 6 months, and fitted with cochlear implants by one year of age. This presents a huge diagnostic challenge on general and paediatric ENT services to have a child diagnosed and referred on to the cochlear team in a timely manner given the length of the waiting lists. The hearing screening programme has also put huge pressure on the cochlear implant team. A further issue is that best practice now advises that fitting of bilateral rather than unilateral implants should be standard.

25.1 BACKGROUND

The report of the Children's Surgical Forum (UK, 2007) titled Surgery for Children – Delivering a First Class Service highlighted a number of issues and made a number of important recommendations:

1. Most complex surgery in children should be centralised to provide best outcomes
2. All children must be treated by appropriately trained professionals in an environment suitable for their needs
3. Day case surgery should be encouraged as much as possible
4. The clinical governance structure of each hospital providing children's surgery should be multi-disciplinary and include anaesthetists, surgeons, paediatricians, paediatric nurses, and paediatric health and social care professionals.

With respect to this set of recommendations, ENT surgery would fulfil these criteria in general. Paediatric ENT is provided for at regional and tertiary centres with a co-existing medical paediatric service. The Royal College of Surgeons in Ireland (RCSI) recognised the importance of this issue, and following on from the Children's Surgical Forum (UK, 2007) it was decided to focus attention at the Millin Symposium in RCSI in November 2008 on the very important issue of the delivery of paediatric surgical services in the Republic of Ireland and the challenges facing same. ENT was well represented at this symposium, and it was clear that children are large users of ENT services both at a regional and tertiary level.

It was noted, however, that a combination of factors such as lack of training and exposure in other areas (such as anaesthesia) at regional level, combined with retirements and changing of work practices, would place some increased pressure on the tertiary units. This has become evident in the intervening years. It was pointed out that it was neither feasible nor desirable for all paediatric procedures, particularly in the high volume specialties like ENT, to be referred to tertiary units.

25.2 CURRENT SERVICE PROVISION

25.2.1 Service Types

Elective Surgery

The vast majority of ENT assessments and surgeries are in otherwise healthy children. Unlike adult ENT there is a very high conversion rate from assessment at a clinic to being listed for surgery. General Practitioners (GPs) in general only refer children who have significant problems. The large majority of these cases are otherwise healthy children admitted for elective surgery, e.g. grommets, adenoidectomy and tonsillectomy. A high proportion of these cases are listed for day case surgery and the vast majority of other procedures require just one night in hospital (i.e. 23-hour admission).

Emergencies

ENT attendances are a common presentation to the Emergency Departments (EDs). Some of this is related to complications arising as a consequence of long waiting lists and some of it is because of ear, nose and throat problems are by their very nature very common. Most ENT emergencies also occur in children without other problems. Emergency work includes:

- management of foreign bodies in the ear, nose, throat and airway
- infections secondary to ear and sinonasal disease
- head and neck abscesses
- arrest of bleeding following adenotonsillar surgery

On call rotas, particularly in units dealing with a busy paediatric and neonatal service, tend to be onerous in terms of both frequency of being on call and the number of call outs as low levels of staffing at all grades mean staff are on call for multiple hospitals at once.

Subspecialist ENT

Subspecialist paediatric otolaryngology includes routine ENT surgery in children with substantial developmental, immunological or other systemic diseases, congenital ear surgery, bone anchored hearing aids and prosthetic ears, cochlear implantation, management of laryngo-tracheal stenosis and other airway problems, repair of choanal atresia, management of severe congenital and developmental conditions of the head and neck.

25.2.2 Current Staffing and Services

There are approximately 40 ENT consultant surgeons in eleven ENT units in the country:

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|---|--|
| <p>Regional units / units delivering general ENT</p> | <p>Cork (incorporating Tralee) 4WTE Limerick 3WTE Galway 5WTE Sligo 3WTE Waterford 4WTE Tullamore 3WTE Drogheda 0.4WTE – elective only Royal Victoria Eye & Ear Hospital 3WTE National Children Hospital Tallaght 1.8WTE Beaumont 7WTE (including cochlear and paediatric elective only)</p> <p><i>There is some on-call cross cover also provided by the consultants in St. Vincent's, Mater and St. James's Hospitals.</i></p> |
| <p>Tertiary units</p> | <p>Our Lady's Children's Hospital, Crumlin 1.5WTE Children's University Hospital, Temple Street 1.8WTE</p> |

Paediatric ENT services are provided by six units outside of Dublin and five units within the greater Dublin area, including two tertiary referral units. In centres outside of Dublin, paediatric ENT accounts for 40-50% of the total workload. Within the greater Dublin area, the only paediatric ICU facilities are within the two tertiary centres at Temple Street and Crumlin. In addition to tertiary referral work, these two units provide a general ENT service to both the surrounding catchment areas and the north east of the country. Some tertiary work is also carried out in the other three Dublin hospitals particularly in the areas of otology.

Our Lady's Children's Hospital Crumlin (Crumlin) is an extremely busy airway surgery service, with over 300 assessments per year, and also provides support to the Paediatric Intensive Care Unit (PICU) and the national paediatric cardiothoracic surgical unit, the Coombe Women and Infants University Hospital, and part of the National Maternity Hospital Holles Street. It also provides a tertiary otology service including a paediatric bone anchored hearing aid (BAHA) service.

Temple Street provides a tertiary service to the Rotunda, part of the National Maternity Hospital Holles Street, the national paediatric neurosurgical service, the national metabolic service, and the cleft palate and craniofacial service. It also provides a tertiary otology service, including a paediatric BAHA programme and cochlear implantation in children under the age of 6. Both Temple Street and Crumlin consult and operate on any babies accepted via "the bridge" PICU booking system which places any baby transfer in either Crumlin or Temple Street based on bed availability.

Regional ENT services, and particularly the two tertiary services, are chronically under-resourced. This has resulted in unacceptably long waiting lists for children to be seen on an outpatient basis. In some units children categorised as urgent are not being seen for eighteen months and routine cases are never being seen. With regard to inpatient waiting lists these can extend from twelve to eighteen months and longer. In addition, the on-call rotas are extremely onerous particularly in the two tertiary units and a number of the regional units.

25.2.3 Paediatric Services in Regional Centres

All paediatric cases that are referred to ENT services in these centres are seen in the outpatient setting. These referrals either come from general practice, or from the paediatric and neonatal services in that centre, and encompass a broad spectrum of patients including the straightforward cases in a well child right through to complicated airway problems and children with multiple co-morbidities. These are all assessed and then either dealt with in that centre or referred to the tertiary centre. The majority of cases, approximately 90%, are dealt with locally although the pattern of referral to tertiary centres varies from unit to unit. This largely depends on the skill set mix of the multi-disciplinary units surrounding ENT within that centre such as paediatrics and anaesthesia.

The issue of general paediatric ENT in the majority of regional centres needs to be urgently addressed with a view to addressing the current crisis situation:

- Outpatient waiting times need to be urgently reduced - currently they can be as long as 2 years for urgent cases and routine cases are never being scheduled
- Theatre capacity needs to be expanded
- Ring-fenced beds need to be provided
- Day surgery ENT treatment needs to be substantially developed
- Specialist ENT nursing service needs to be developed
- Audiology, speech and language therapy, and other health and social care professions need to be resourced adequately
- An adequate retrieval/transport system for unstable children needs to be developed

25.2.4 Tertiary Services

Two things can make a child a tertiary unit case:

1. The child needing subspecialist care

Any child with a rare condition necessitating specialist experience, i.e. uncommon ENT procedures. This consists of conditions such as choanal atresia, syndromic children with unusual ear, nose or throat problems, babies with specific airway conditions such as subglottic stenosis and babies needing tracheostomy. It also includes children requiring cochlear implantation and BAHA among other things.

2. The child needing general ENT procedures that need tertiary hospital facilities.

This includes a large volume of children who need common ENT procedures, e.g. tonsillectomy, adenoidectomy and grommets, but who are considered an anaesthetic risk in their regional unit or who need other specialist care. For example children who suffer from renal conditions, neurological conditions, metabolic conditions and cerebral palsy among other things. A number of changes in practice in more recent years have also increased the burden on the tertiary centres. There has been increased survival of babies with complex abnormalities and this has had a significant impact on the numbers both referred to the tertiary centres and the numbers presented primarily to the tertiary centres from within that unit. In addition, many children with sleep disturbance/history suggestive of sleep apnoea are now being referred to the only two units with a backup of PICU facilities. Similarly many children requiring adenotonsillectomy under the age of three are often referred to tertiary units because of anaesthetic concerns.

Within the tertiary units the main caseload is divided into a number of groups:

- a) Complex problems
- b) Complex patients with complex problems - this includes children with syndromes, airway issues and tracheostomies
- c) Complex patients with common problems - this includes children with syndromes, congenital heart disease, neurological conditions, the metabolic, haemato-oncology group and the gastroenterology and renal transplantation group, all of whom may have common ENT problems requiring therapy
- d) Healthy children with common ENT problems that are within the catchment area of Temple Street and Crumlin

With respect to Crumlin, many procedures are now performed in the Royal Victoria Eye and Ear Hospital, but the provision of this general service still makes up a significant proportion of work at Temple Street. This is exacerbated by the paucity of ENT services within the northeast, thus creating a particularly large catchment area. The issue of general paediatric ENT in Temple Street and Crumlin needs to be urgently addressed with a view to addressing the current crisis situation:

- Patient outpatient waiting times, which can be as long as 2 years need to be urgently reduced
- Theatre capacity needs to be expanded
- Ring-fenced beds need to be provided
- Day surgery ENT treatment needs to be substantially developed
- An ENT service for the northeast region needs to be developed either as a standalone unit or through an outreach service from Dublin

Capacity is a major limiting factor. The main weakness is that many operations are cancelled due to bed shortages. This leads to a major choke point in the ENT services. ENT is frequently perceived as a less essential activity and consequently is an 'early casualty' when there is capacity problems or a financial over-run. Consultant manpower is also a major problem in many of the regional centres and the two tertiary centres. Delivery of service, particularly an on-call service, is unsustainable without increased consultant manpower. In both tertiary hospitals the high level of expertise of the nursing staff, including the airway nurses and the clinical nurse specialists, is acknowledged as is the high quality of the health and social care professionals including those in audiology and the speech and language therapy departments.

25.2.5 Paediatric ENT Training

Paediatric otolaryngology is a core part of training within the training programme of otolaryngology / head & neck surgery run under the auspices of the Royal College of Surgeons (London, Dublin, Edinburgh and Glasgow) and the Specialist Accreditation Committee (SAC). Every trainee does a minimum of six months paediatric ENT surgery in a tertiary unit as well as being exposed to the paediatric cases in all regional units during the rest of their training. There are currently 26 specialist ENT trainees.

There is a designated part of the intercollegiate exam dedicated to this area, and all parts must be passed to get accredited and placed on the specialist register in otolaryngology. Those with an interest in an appointment at a paediatric hospital and many others have undergone further post graduate fellowship training in paediatric ENT surgery abroad. Subspecialist paediatric otolaryngology is provided in Temple Street and Crumlin by ENT surgeons with a specialist interest in paediatric otorhinolaryngology. To date all paediatric ENT appointments have been split appointments with the exception of one in Crumlin. These appointments have varying degrees of adult/paediatric work. As there is an overlap in the conditions between adults and children, split appointments

are often beneficial to the volumes required to maintain safe services with best outcomes. Paediatric airway surgery does benefit from a fulltime role, and at present there is only one full time paediatric otolaryngologist whose particular area of interest is in paediatric airway surgery. This needs to be increased.

There is a severe shortage of subspecialist paediatric ENT surgeons (3.3WTE in total) to serve the whole country. It is now a bigger problem than ever for a number of reasons:

- there are increasing numbers of children with complex disorders requiring subspecialist care
- there is increased survival of premature babies requiring ENT input
- in regional centres, there can be a lack of paediatric anaesthetic experience and intensive care support which may result in children with complexities being referred to the tertiary unit - this may not have been in the past, and there is a great difficulty in maintaining an on call system for the tertiary units due to the small numbers involved

25.2.6 Weaknesses for the Specialty

ENT is a specialty which has been chronically under-resourced and under-funded at a national level and while there has been some response to the need for increased resources and additional consultant manpower at a regional level, there has been no response at tertiary hospital level to impending crises. This includes the area of provision of paediatric ENT services. With improvements in other areas of paediatric subspecialist care such as PICU, anaesthesia, neurosurgery, craniofacial surgery, neonatology, and foetal medicine to name but a few, has come an unprecedented demand on a tiny group of subspecialists (3.3WTE) in the country as a whole.

The regional centres are also characterised by long outpatient waiting times and long inpatient waiting lists. In most units the consultants are on onerous on-call rotas. Given the sheer pressure of trying to keep up with demand it is little wonder that no one has had the time or resources to gather precise data about ENT activity nationally. This makes it difficult to estimate the amount of investment that will be required to provide an efficient, responsive service. Suffice to say that the addition of the advised 2WTE at tertiary hospital level will probably have little impact.

25.3 PROPOSED MODEL OF CARE

25.3.1 National Vision for Paediatric ENT Surgery

Since the Comhairle na nOspidéal report (2005), the ENT service has had a national vision. With just regional and tertiary units (and no local units as referred to frequently in NHS documents) we have been at the forefront of subspecialisation realising that in certain areas like head and neck cancer and paediatric ENT a degree of centralisation is necessary. It is extremely difficult to deliver a safe and cohesive service however when the Department of Health and successive hospital managements have failed to put in place any of the investments required to deliver on these fronts. Due to current clinical workloads there has been insufficient time and attention paid to continuing and developing a vision and a strategy for the specialty nationally in relation to children. Unlike other areas there has been no national clinical programme in ENT developed which would have incorporated paediatric ENT.

Long waiting lists are easily explained in that this is a specialty which has been chronically under-resourced. There must be an adequate level of investment into recruitment of ENT surgeons until the internationally accepted levels of 1:80,000 are achieved in order to provide a basic, safe, national service. In addition one needs

to put added resources into certain subspecialty areas which are at crisis point and where resources are falling far behind demand. One of the main ENT subspecialty areas in trouble is paediatric ENT.

25.3.2 Recommended Standards for Paediatric ENT Services

Apart from capacity failing to meet demand these standards are in keeping with current practice. Currently, all outpatient reviews are seen within the child's catchment area. The majority of ENT procedures are carried out in that same hospital, appropriately placed near the child's social structures. In the cases where this is not feasible, for the reasons outlined above, a clear referral route should be available to that unit.

Elective Paediatric ENT Services

Many paediatric ENT surgical procedures can be performed on a day-case basis. Inpatient stays should be based on clinical indications. Inpatient elective paediatric ENT surgery in children who have not reached their 16th birthday should only be undertaken in sites which have:

- Access to inpatient paediatric beds
- Trained paediatric nursing staff
- Anaesthetists assisted by dedicated staff (operating department practitioners, assistants, anaesthetic nurses) with specific paediatric skills and training
- Emergency ENT and anaesthetic cover for paediatric ENT inpatients
- Direct access (without need for ambulance transfer) to an emergency theatre that is appropriately equipped for paediatric ENT surgery
- A child-friendly environment including appropriate security, furnishing and play opportunities
- Child-only theatre lists or lists which group children separately from adults
- A child protection policy, including staff training
- Peer review of practice and outcomes

Elective Paediatric ENT Daycase Services

Hospitals with on-site inpatient paediatric beds should meet the following standards in order to provide day-case paediatric ENT surgery:

- Parents and carers should receive clear instructions on follow-up, and written information on arrangements to deal with any post-operative emergency (including out-of-hours contact telephone numbers)
- Day case sessions staff must include children's nurses
- Units must develop and implement a pain management policy, including advice on pain assessment and management at home and the provision of 'take home' analgesia
- The environment should be child- and family-friendly and have input from play therapists
- A child protection policy, including staff training
- The pattern of day-case activity should be audited and regularly reviewed
- Peer review of practice and outcomes should be undertaken
- A clear protocol for contact with PICU to arrange the transfer of patients should complications arise

Anaesthetics

Each hospital providing paediatric ENT surgery must have one designated lead anaesthetist for paediatrics who has undergone additional training. The lead anaesthetist should undertake the equivalent of at least one child-only list per week which can include ENT, dental or other specialty cases. All anaesthetists who provide anaesthetic services for elective paediatric ENT cases should:

- Undertake a sufficient volume of paediatric anaesthesia to maintain skills and competence. This could be demonstrated by the equivalent of at least one child-only list per month, or ideally one per fortnight which can include ENT, dental, or other specialty cases.

- Audit their practice on key outcomes, including, but not limited to mortality, unexpected readmission rate, complication rate, unexpected onward referral to tertiary centres.
- Participate in audits involving anaesthetists from other sites.
- Update their skills by participating in continuing professional development events with paediatric anaesthetists, possibly through in-reach or outreach arrangements.

Emergency Paediatric ENT Services – Assessment in Emergency Departments

Staff in EDs or other units that receive children must maintain the skills and competence to undertake resuscitation of a collapsed child in an emergency. At all times, at least one member of the team on duty should have completed advanced paediatric life support (APLS) training. In addition, any anaesthetist should be prepared to manage children in such an emergency. Staff in EDs and other units that receive children must maintain the skills and competence to accurately assess and diagnose children with ENT conditions.

Emergency Paediatric ENT Services – Observation in Regional Unit

Children who require observation should be admitted under the care of an ENT surgeon/paediatrician at the regional unit.

Emergency Paediatric ENT Services - Transfer

Where it is determined that a child needs surgery, or is likely to need surgery, this is generally carried out at the regional unit unless the child's clinical condition necessitates transfer to a tertiary unit. The decision on the need for transfer to the tertiary paediatric hospital is frequently a multidisciplinary one involving ENT consultant, consultant paediatrician and consultant anaesthetist. Often this is determined by the need for a PICU bed.

25.4 REQUIREMENTS FOR SUCCESSFUL IMPLEMENTATION OF MODEL OF CARE

In order to continue to provide an emergency service in Temple Street and Crumlin consultant expansion is essential. Both units have a daunting workload of general and specialist ENT. New appointments would permit first of all a humane and workable on-call service provision. In addition it would allow realistic subspecialisation in the paediatric aspects of the specialty, improve patient access to specialist care, and permit the development of managed clinical network arrangements where appropriate. Without an adequate and immediate expansion in consultant numbers throughout the country children will continue to languish on unacceptably long waiting lists potentially having an adverse effect on their long-term health and development.

To have an effective, responsive paediatric ENT service there is a need for at least another 10WTE paediatric ENT consultants across the two tertiary Dublin sites (in the future to be subsumed into the new children's hospital) with some pure paediatric ENT and some linked to adult subspecialties. In addition, there is a need for 2WTE, each with a 0.5WTE subspecialist interest in paediatric ENT, at many of the six regional sites. Once consultant appointments reach a safe level the employment of advanced nurse practitioners would be a valuable asset for initial screening of children with referred ENT problems. This could shorten waiting lists and lead to earlier identification of children who need specialist ENT attention. They are however needed in addition to not instead of ENT surgeons. Corresponding increases in audiologists, speech and language therapists (particularly SLTs with advanced knowledge and training in the management of tracheostomy, voice, communication and feeding problems) and other health and social care professionals will also be required.

25.5 PROGRAMME METRICS AND EVALUATION

Ideally for a comprehensive model of care one should be able to provide information on the following:

- The site of every ENT surgical service
Six regional units; eight Dublin hospitals who together form five units (including two tertiary paediatric units)
- Staffing
There are forty ENT consultants (22 outside Dublin, 18 within Dublin - of whom 3.3WTE are paediatric specialists). There are 26 trainees on the national training programme, of whom 2.5 are assigned to the tertiary paediatric units. There are a total of three paediatric airway nurse specialists and two paediatric clinical nurse specialists assigned to the tertiary paediatric units.
- Number of operating lists
As a high volume specialty daily operating lists are the norm although because of lack of protected beds cancellations of elective surgeries are common.
- Number of OPD clinics and appointments annually in each centre
Daily clinics are again the norm with overbooked clinics and long waiting times up to 2 years being common because of poor investment in the specialty. This is particularly difficult in attempting to provide a timely service to the paediatric population.
- The number of ENT emergencies annually
This is difficult to estimate given the inaccuracy of HIPE data. Suffice to say that in Dublin multi-hospital cover and in particular onerous on-call rotas for those involved in a number of areas including paediatrics and head and neck is the norm. For those covering paediatrics 1:4, 1:3, and 1:2 rotas exist.
- An estimate of the amount of general and specialist ENT work in children nationally each year
This will require significant investment to develop a database.

25.6 KEY RECOMMENDATIONS

- Increase consultant numbers, both whole time paediatric otolaryngologists or with special interest in paediatric otolaryngology, with the immediate priority being tertiary units but also some increase required in the regional units.
- Increase in support staff – nursing, health and social care professionals and administration to enable effective service provision.

25.7 ABBREVIATIONS AND ACRONYMS

| | |
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| APLS | Advanced Paediatric Life Support |
| BAHA | Bone Anchored Hearing Aid |
| ED | Emergency Department |
| ENT | Otolaryngology / Head & Neck / Ear, Nose & Throat |
| GP | General Practitioner |
| HSE | Health Service Executive |
| ICU | Intensive Care Unit |
| PICU | Paediatric Intensive Care Unit |

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|------|--------------------------------------|
| RCSI | Royal College of Surgeons in Ireland |
| SAC | Specialist Accreditation Committee |
| WTE | Whole Time Equivalent |

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