

The All Wales ENT SHO Bootcamp: A National Induction Initiative

Simon Morris MRCS(ENT)

Department of ENT, Morriston Hospital, Swansea. SA6 6NL.

Laura Burton MRCS(ENT)

Department of ENT, University Hospital Wales, Cardiff. CF14 4XW.

David Owens FRCS(ORL)

Department of ENT, University Hospital Wales, Cardiff. CF14 4XW.

Corresponding Author

Simon Morris

Department of ENT, Morriston Hospital Swansea, Wales, SA6 6NL.

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ABSTRACT

OBJECTIVES: This study demonstrates a national programme which has been accepted in Wales as a mandatory part of the induction process for the rotating ENTSHO cohort.

METHODS: The ENT Induction Bootcamp was established based on the learning needs of ENTSHOs. Pre- and post-course assessment of the subjective and objective benefit of the 1-day course was captured.

RESULTS: Between 2022-24, 152 participants have attended the bootcamp; all of whom (100%) found the course beneficial. The greatest improvements in participant confidence were observed in emergency tracheostomy management, flexible nasendoscopy and nasal examination (all $p < 0.01$). Based on objective assessment, participant knowledge improved from a mean of 68.5% to 96.5%.

CONCLUSION: This initiative highlights the value of a bootcamp approach to standardise junior doctors' abilities to manage ENT emergencies. This bootcamp is now a mandatory component for all SHO entering ENT attachments in Wales, in an easily adoptable format.

MeSH Keywords: *Otolaryngology, Learning, Motivation, Medical Education.*

Introduction

Within the National Health Service (NHS), many acute otolaryngology (ENT) services are led by newly graduated foundation doctors, the so-called “ENT SHO”. These Senior House Officers (SHO) require a great deal of practical skills when managing patients with acute issues. A systematic review from 2016 identified that confidence in managing ENT patients is low amongst doctors based on their undergraduate training and supported the need for further research into the impact of this on post-graduate ENT practice.¹ One study has shown that 68% of junior doctors expected to cover ENT overnight had no prior ENT experience and 42% did not feel comfortable managing acute issues.²

The majority of undergraduate curricula focus solely on ENT anatomy and physiology, with limited attention to surgical management of pathology; which has negative implications for management of basic ENT complaints such as antibiotic prescribing in otitis externa and oxygen administration in laryngectomy patients.³⁻⁵ With patient safety paramount during on-call and out-of-hours shifts, there is a clear gap to support the rotating junior doctor cohort to prepare them for their ENT attachments.⁶ Likewise, the national GMC survey often identifies deficiencies in induction training in the national GMC survey.⁷

Bootcamps have grown in popularity in various parts of medical and surgical training, recognised as an effective and efficient way to rapidly improve knowledge, confidence and surgical skill.⁸⁻¹⁰ These programmes deliver an intensive learning experience, designed to standardise learners’ knowledge and skillset within the context of their current training posts.

This study follows a piece of research performing a needs-based learning assessment for ENTSHOs working in the NHS, which identified the need for simulation-based training to facilitate safe and efficient work within the role of the ENTSHO.¹¹ This study highlighted the need for focussed simulation and non-technical skills training with a near-peer training model.¹¹ As such the curriculum of the current induction programme was mapped to these outcomes, to capture the specific needs of these rotating junior doctors.¹¹

Aims

This study aims to present the outcomes of a standardised and national training programme which has been accepted in Wales as a mandatory part of the induction process to support the rotating ENTSHO cohort.

Methodology

Bootcamp Design

The format of the bootcamp was designed and established in response to the outcomes of the existing learning needs assessment (Figure I).¹¹ Each station included a balance of knowledge and skill acquisition; using high-fidelity simulation methods including epistaxis model, The Newport Quinsy Simulator, SimMan ® for National Tracheostomy Safety Project tracheostomy algorithms, microscope and model head for micro-otoscopic skills; as well as opportunity to simulate non-technical skills such as the GP referral and advice-giving process.^{12,13}

Approval was sought and granted from all training centres within Wales; with agreement to release rotating trainees for 1 day during the first week of their rotation to attend a centralised unit which provided the 1-day induction bootcamp. All participating units agree to cover the day shift and corresponding night shift with a non-training grade doctor, experienced SHO (for example CT2) or a middle-grade stepping down into SHO role.

During the 1-day course, junior trainees rotate through 6 stations, facilitated by a mixed, near-peer faculty of ENT Registrars and Consultants. The faculty to participant ratio is typically 1:4, requiring 8 faculty members on each run of the course.

The bootcamp is hosted at a centralised Medical Education Centre in one unit in Wales where all participants have access to simulation lab. This is provided free of charge for all attendees. Consumable equipment has been purchased via a grant from Health Education & Improvement Wales (HEIW).

Data collection

Planning of the course followed Stufflebeam's Context, Input, Process and Product (CIPP) model. Following an initial learning needs assessment, feedback tools were designed in order to gain continuous feedback and modify the course delivery as needed over each iteration.^{11,14}

Participants were asked to complete pre- and post-course questionnaires. Likert scales are used to assess pre- and post-course confidence in the taught areas. Open text questions are also included to ensure that additional learning needs are captured and addressed prior to the next iteration (if participants feel that the current curriculum does not capture their needs). A pre- and post-course multiple-choice question (MCQ) assessment was undertaken to judge objective improvements in participants' knowledge as a result of the course.

Participants

All rotating ENTSHO (FY1, FY2, GP trainee, CT1, CT2), Physicians Associate (PA) and Advanced Nurse Practitioners (ANP) are required to attend when commencing new rotations in ENT departments in Wales. Relevant staff from all 8 training units in Wales attend. Six iterations of the induction bootcamp have taken place between August 2022 – April 2024; these occur on a 4 monthly basis for the rotating cohorts of junior doctors.

Analysis

Anonymised data were collated into Excel (Redmond, WA, USA). Paired t-test was used to compare pre- and post-session mean confidence scores, with a p value <0.01 needed for statistical significance.

Results

In total, 152 participants have attended and completed the pre/post-course questionnaires during the five iterations of the bootcamp. This comprised: 43 Foundation Year 1 doctors, 56 Foundation Year 2, 16 Core Surgical Trainees, 23 GP Trainees, 5 Junior Clinical Fellows, 3 Advanced Nurse Practitioners, 1 Physician Associate and 5 Medical Student observers. The mean ENT experience was 0.9 months based on prior undergraduate or post-graduate attachments (range 0–24 months).

100% of participants (n=152) stated that they felt more confident as a result of the course and that it fulfilled their pre-specified aims. The most commonly praised aspects of the course were the hands-on experience, simulated referral triage process and near-peer learning model which consolidated their working relationship with senior colleagues.

Course satisfaction was high across all areas assessed. Participants were asked to assess the course on a number of domains ranging from 0 (very poor) to 5 (excellent). The course was rated highly for a number of factors including usefulness, teaching and methods used (Figure II).

Subjective benefit from the course was ascertained by participants' self-reported confidence in various areas of the curriculum from 0 (no confidence) to 10 (utmost confidence) (Figure III). All areas demonstrated a statistically significant improvement in self-rated confidence; even in the areas with high pre-course knowledge such as management of otitis externa, tonsillitis and epistaxis. The most significant improvement was observed in emergency tracheostomy management (2.2 to 7.8), flexible nasendoscopy (2.4 to 7.8) and nasal examination (2.8 to 8.2). All changes in mean pre- and post-course knowledge observed statistical significance with $p < 0.01$.

Based on the objective assessment, participant knowledge improved from a mean score of 68.5% (range 30-100%) to 96.5% (range 60-100%).

As a proxy measure of success, the GMC national training survey outcomes for all ENT units in Wales (where available) were reviewed for the dates before the course was implemented and compared to the subsequent survey outcomes.⁷ The mean induction score in 2019 was 70.5% compared to 78.0% in 2023's survey.

Discussion

This is the largest formal, national and mandatory bootcamp induction course offered for junior doctors in ENT to the authors' knowledge. Using a combination of small group teaching, high-fidelity simulation training and practical skills sessions, trainees were exposed to all areas of emergency ENT at a level anticipated for a day 1 ENTSHO on call. The course curriculum was mapped to a focussed learning needs assessment, capturing both anticipated and unanticipated needs of rotating doctors.¹¹ The course has demonstrable subjective benefit for junior doctors rotating into ENT attachments, which correspond to greater trainee satisfaction in the 2023 GMC survey within the units in Wales.

Despite the "first on-call" being an established role for ENT SHOs, no consensus exists about the expectations for the care they provide.¹¹ Therefore, providing a needs-based induction has demonstrable benefits in medicine, equipping rotating junior doctors with an improved baseline of knowledge and skills.¹⁵ Providing this in an accelerated learning programme, frequently termed a "bootcamp", has been recognised as an effective and efficient way to rapidly improve knowledge and skill at the Core Surgical Trainee level.^{8,9} This allows standardisation of juniors' abilities according to their job's expectations and aims to ease the transition from medical student, to foundation doctor, to core surgical trainee respectively.

The largest increases in confidence were seen in the most emergent or unfamiliar skills, such as tracheostomy emergency and flexible nasendoscopy; which reinforces the unfamiliarity rotating junior doctors have when undertaking routine tasks within their first on-call role. This contrasts to previous work defining the ideal ENT curriculum which has less emphasis on practical skill need, and more on anatomy and physiology of ENT pathology.^{16,17} It was also apparent that prior to this course many SHOs did not feel confidence managing simple post-operative care for common operations, such as tonsillectomy, thyroidectomy, panendoscopy and Functional Endoscopic Sinus Surgery (FESS); which was a novel finding in both the learning needs assessment and course outcomes.¹¹

This simple yet effective educational intervention has improved the confidence and abilities of rotating junior doctors to work in ENT departments in Wales. The authors believe that this bootcamp demonstrates an ideal, evidence-based curriculum and format for other training deaneries wishing to implement a standardised induction for their rotating junior doctor cohort.

Summary Bullet Points (5)

- There is a clear gap in postgraduate education to support the rotating junior doctor cohort and prepare them for their ENT attachments.
- This is the first national ENT SHO Induction Bootcamp to provide rotating ENTSHOs with both the technical and non-technical skills needed for their ENT first on-call role.
- 100% of attendees demonstrated both an objective and subjective benefit after attending this course.
- The greatest increases in self-reported confidence were seen in the most emergent or unfamiliar skills, such as tracheostomy emergency and flexible nasendoscopy.
- This showcases an evidence-based curriculum and format for other training deaneries wishing to implement a standardised induction for their rotating junior doctor cohort.

Conclusion

With patient safety paramount during on-call and out-of-hours shifts, there is a clear gap to support the rotating junior doctor cohort to prepare them for their ENT attachments. This novel ENT bootcamp provides a needs-based induction process for all ENT SHO in Wales to standardise their abilities, knowledge and confidence prior to starting a new rotation in this inherently practical specialty. This bootcamp is now a mandatory component for all rotating junior doctors entering ENT attachments in Wales and identified a format that can be easily adopted across other deaneries.

Ethical Standards: Formal ethical approval was not required for this work.

Funding: No funding was received for the research. Consumable course equipment has been purchased via a trainee grant from Health Education & Improvement Wales (HEIW).

Competing Interests: None.

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Figure 1: Stations and Mapped Curriculum for Induction Bootcamp Day Including Station Activities

Station 1	Otology	Microscope and otoscopy skills, recognition of common pathology, ear foreign body removal, interpretation of PTA.
Station 2	Rhinology	Examination skills, practical epistaxis management (model to simulate nasal examination, packing and cautery).
Station 3	Head & Neck	Performance of simulated FNE and quinsy drainage on Newport Quinsy Simulator ¹² , recognition of acute airway pathology.
Station 4	Airway	Use of high-fidelity simulation man (SimMan ®) to learn NTSP tracheostomy and laryngectomy algorithm.
Station 5	Post-Operative Care	Post-operative management of routine ENT procedures and associated complications (including tonsillectomy, FESS, Panendoscopy, major ear surgery, thyroidectomy).
Station 6	Referral / Triage	Discussion of triaging referrals, prioritisation and advice giving.

Figure II: Mean Overall Participant Satisfaction Scores (0 Lowest Satisfaction – 5 Highest Satisfaction)

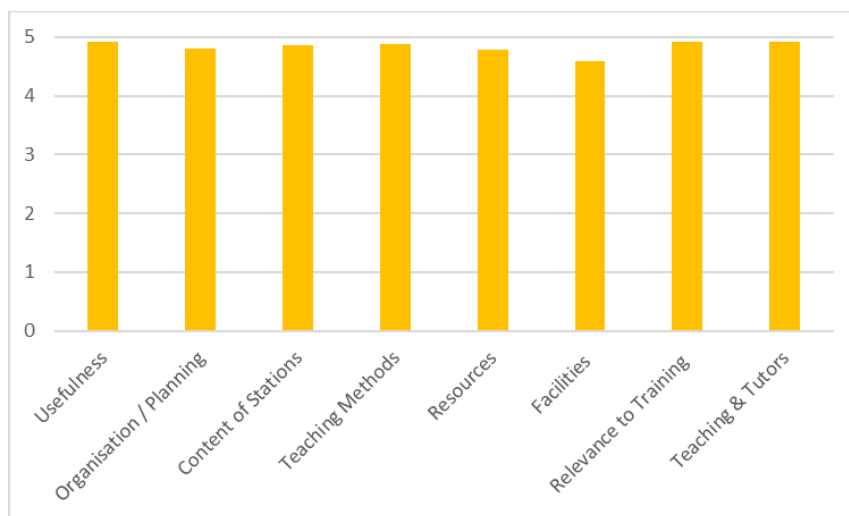


Figure III: Mean Attendee Self-Reported Confidence in Curriculum Domains (mean pre- and post-scores with standard deviation; where * indicates $p < 0.01$)

