

Research Article

The Educational and Clinical Benefits of a “Consultant-Speciality Trainee” ENT Shared Clinic

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Introduction and Aims. The European Working Time Regulations (EWTR) of 48-hour working week limit have raised concerns regarding the quality of medical training for junior doctors. Our study has looked to improve junior doctors training without impairing patients' care with the introduction of one-to-one “consultant with specialty trainee” doctor teaching in the outpatient clinic setting. **Methodology.** In this study, an ENT specialty trainee conducted a 3-month block of solo clinics seeing new patients. After that, the same specialty trainee shared the clinic with an ENT consultant for 3 months and subsequently the same trainee reconducted solo clinics. Outcomes of the specialty trainee performance were measured clinically by completed patient episodes (CPE) (i.e., patient discharged from clinic or placed on surgical operation waiting list) and ongoing patient episodes (OPE) (i.e., patient given follow-up appointment to ENT clinic) and educationally by workplace based assessments (WBA) completed in the trainee's e-portfolio. **Results.** 271 patients were recruited in this research: 24% being in the preintervention group, 47% during the intervention, and 29% in the postintervention. The intervention of one-to-one outpatient clinic teaching increased the specialty trainees CPE rate (60% to 67.5%, $p > 0.1$) and reduced their OPE rate (40% to 32.5%, $p = 0.001$). Educationally these trainees completed with the consultant statistically significant WBA (17 assessments) during the one-to-one clinics compared to solo clinics (2.3 on average). **Discussion and Conclusion.** In this study, a positive trend in the clinical outcomes was obtained in terms of CPE, while a statistically significant reduction of the total OPE was achieved giving an indicator to consider this concept for further research in terms of patient's clinical outcomes. Nevertheless, it showed a new way of supporting the trainee's education supported by more WBA being filled.

1. Introduction

European working time regulations (EWTR) were implemented in August 2009 with a new time limit of a 48-hour working week for junior doctors working all over Europe. This adjustment was introduced gradually, in phases starting from 58 hours per week from 2004 to 2007 and then 56 hours from 2007 to 2009 until reaching a 48-hour limit in 2009. The aim of this adjustment was to balance the work-personal life of staff by assuring enough resting periods and prevent working excessively for long hours.

However, concerns have risen by this enforcement that the considerable reduction of duty-hours will impair the continuity of patient care, reduce the availability of medical staff, and limit the range of junior doctor's professional training [1]. Moreover, due to the compliance to the rules

of EWTR regarding the organisation of rotas between shifts, there was a significant decrease in the interactions with trainers and training opportunities were negatively affected [1]. Adding to that, surgical trainees have been more affected with this new regulation as forming a surgeon requires more hands-on experience in acute care setting. A survey by the Association of Surgeons in Training (ASiT) demonstrated that, out of the 1600 surgeons in training that filled the survey, almost two-thirds of them claimed deterioration in their surgical exposures and teachings since the implementation of EWTR in 2009 [2].

In order to help improving this issue without compromising the quality of patient care, this study has been conducted within these working time restrictions in the ENT outpatient setting. This study aimed to examine whether more intense one-to-one “consultant with specialty trainee

doctor” teaching in the outpatient clinic setting would make any difference in the trainees’ educational progress and the clinical effectiveness with regard to patient outcomes or not. Although this model of consultant-teaching clinic is novel for the ENT department, “teaching and training” is highly emphasized by the General Medical Council and highlighted by the publication of *The Doctor as Teacher* [3]. Therefore, this piece of work will also support an essential role of consultants in clinical settings.

Different medical databases (e.g., PubMed) were used to explore the outcomes of EWTRs in trainees and patients. No comparable literatures were used to relate to this topic as the idea of “one-to-one consultant and trainee shared clinic” is new to ENT department.

2. Aims and Objectives

This study intends to explore whether more intense one-to-one “consultant with specialty trainee” doctor teaching in the outpatient clinic setting would make any difference in the trainee’s educational progress and clinical effectiveness with regard to patient outcomes. We anticipate that the outcomes of this study can be applied to all surgical departments that junior doctors are belonging to, with some adjustments to the way of running clinics as a result of variability of patient loads into each specialty.

3. Methodology and Materials

A pro forma was created to aid data collection and documentation (Appendix). Data was recorded in the consultant working diary and validated by the ENT consultant, ENT specialty trainee, clinical nurses, and secretaries. Excel 2007 was used to transfer all the documented records into an electronic spread sheet. Hard copies of all patients’ letters were used to review the clinical outputs of the trainee doctor.

3.1. Inclusion/Exclusion Criteria

Inclusion Criteria. All patients who attended Tuesday afternoon ENT clinic were included in data collection; thus, no preselection or prescreening of patients was attempted. There were no exclusion criteria.

3.2. Procedure. The study was initiated from October 2011 to August 2012 (over 11 months) in a single consultant’s clinic in the department of ENT. The study was divided into three main blocks with each block lasting about 3-4 months in period. Within the first block (Solo-1), an ENT speciality trainee started conducting clinics (belonging to the study) every Tuesday afternoon seeing 10 new patients selected from the pooled general ENT waiting list. In the second block of the study, an ENT consultant sat in with the ENT speciality trainee in a single clinic whereby the trainee was observing the way of conducting clinics by the consultant as well as being observed by the consultant in other occasions. These “shared” clinics were also conducted every Tuesday afternoon, seeing 3 new and 10 follow-up patients by both of them.

During the second block, the ENT consultant taught the trainee his own method of

- (i) consultation and patient communication skills,
- (ii) history taking, clinical examination, and data gathering,
- (iii) the approach of interpreting results (e.g., explaining audiogram to lay people),
- (iv) making decisions and narrowing differential diagnosis,
- (v) clinical management of common conditions,
- (vi) promoting healthy life style (e.g., advice about smoking/exercise),
- (vii) advice about the best use of primary care,
- (viii) management of complex social problems.

In the third block (Solo-2), the ENT specialty trainee reverted to conduct the Tuesday afternoon clinics by himself seeing 10 new patients in order to compare his clinical competence after intervention.

3.3. Data Collection. Data collection was carried out prospectively within the clinics. Outcomes of specialty trainee clinical performance were measured by

- (1) completed patient episodes (patient discharged [DC] from clinic or placed on surgical operation waiting list [WL]),
- (2) ongoing patient episodes (patient given follow-up appointment to ENT clinic [FLP]).

These measures were helpful to estimate the effectiveness of decisions made by trainee and maximise the use of outpatient clinics by reducing the number clinics and staff, thus decreasing the financial burden for the department.

Educational outcomes were measured by workplace-based assessments (WBA). This type of assessment has been used in this study to obtain a holistic idea of the trainee’s educational and practical achievement. This has involved regular one-to-one feedback and identifying weak points for improvement. These WBA’s forms were completed online contemporaneously in the trainee’s e-portfolio as part of progress monitoring of professional competence.

The data recorded was compiled into spread sheets using Microsoft Excel 2007. Empirical and Chi-squared statistical tests were used for data analysis. Percentages were exploited to extend the data, further demonstrated using tables and line charts. Chi-squared test was used to compare outcomes, before and after the intervention.

During solo-clinic blocks (1st and 3rd), the ENT consultant in charge has reviewed all clinical letters of every single case after patients seen by the trainee in order to further assess the clinical judgment of the trainee and with regard to investigations or follow-ups requested by the trainee. This approach was helpful to maintain the maximum patient’s care in one side and to regularly assess the clinical progress of the trainee on the other.

TABLE 1: Workplace based assessment.

Study clinic	WBA outcomes of the study clinic	Nonstudy clinic	WBA outcomes of the nonstudy clinic
Trainee solo clinic	None	Trainee solo clinic	3 (average)
Trainee-consultant shared clinic	17	Trainee solo clinic	2,3 (average)
Trainee solo clinic after	None	Trainee solo clinic	2,3 (average)

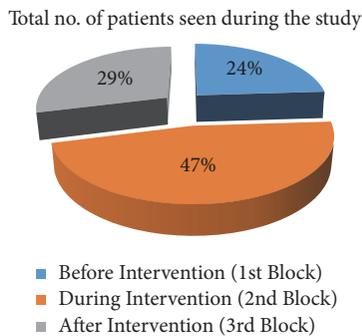


FIGURE 1

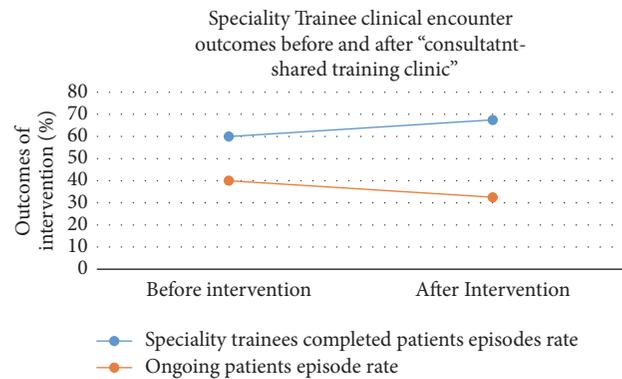


FIGURE 2

3.4. Sample Size. The total number of patients seen by the ENT specialty trainee in the first ($n = 64$), second ($n = 128$), and third block ($n = 79$) gave a total of 271 patients seen during this study. All data was validated and then documented in hard and electronic formats to enable calculations to be made in analysing data.

4. Results

A p value of <0.05 was considered to be statistically significant.

A total of 271 patients were documented and evaluated in this study.

Figure 1 illustrates the percentages of each group of patients being seen before, during, and after the introduction of ‘the consultant and specialty trainee’ shared clinic. The total number of patients for the duration of this study may perhaps be considered as sufficient, especially with idea of conducting one clinic by two specialised ENT surgeons from the pooled ENT waiting list. The portion of patients seen during the shared clinic was higher than the first and the third blocks because the shared clinic template was physically larger, comprising ten follow-up patients along with the three new patients always included in the shared clinics. This is because shared clinics were planned and managed to accommodate this number of patients. The number of patients seen normally by the consultant alone was similar to the number of shared clinic giving no such statistical difference in terms of numbers but more time obviously to conduct these clinics.

Clinical outcome of this new model to the speciality trainee was demonstrated by the rate of completed patient episodes [CPE] (i.e., DC or WL rates) or the rate of ongoing patient episodes [OPE] (i.e., FLP rates). Figure 2 shows an improvement of the rate of CPE from 60% to approximately 67.5% (blue line plot) with a p value of >0.1 . Despite the fact that this outcome is not statistically significant but it shows a

statistical trend, especially if the total number of patients has increased (for e.g., doubled), the significance of p value will be increased. On the other side, a reduction of the total OPE was obtained from 40% to 32.5% (red line plot) with a p value of $p = 0.001$, which is statistically significant.

Workplace-based assessment (WBA) is a method whereby trainee clinicians are assessed within their clinical settings and provided with regular, specific, and goal oriented feedback on their performance. In order to assess the educational outcomes of the speciality trainee involved in the study, online WBA tools were used for this purpose.

Table 1 illustrates the number of WBAs completed for the study (with the ENT consultant involved in the study) and the overall number of all the WBAs completed with other three ENT consultants (not involved in the study) in the ENT department. During intervention of the shared clinic (first column), our trainee was seeing 13 patients and was able to complete 17 WBAs in comparison to solo clinics of the study having none done. On the other side, the target number of patients to be seen by the registrar with each consultant of the other three consultants was 3 news + 7 fellow-ups giving the registrar ample amount of time to complete WBAs. Interestingly, outcomes suggested a substantial increase in the number of WBAs of the study (17) during shared clinics in comparison to the average outcomes (2.3) of three consultants’ inputs being in second block. In the first and the third blocs of the study (Solo clinics), no WBAs were completed as a result of time limitation faced by the trainee doctor to see 10 new patients in a single Tuesday afternoon.

5. Discussion

5.1. A Novel Idea. The main drive of the idea of “one-to-one consultant and registrar shared clinic” was after the

TABLE 2

	Frequency of assessments	Number of assessors	Number of assessments per assessor	Indicative time requirements
MiniCEX	4 per year	2	2	4 hours per year per SpR
DOPS*	6 over 4 years	2	3	1 hour per year per SpR
MSF	2 in 4 years	12–20 raters 1 collater	1 or 2	1 hour per year per SpR

* (https://www.jrcptb.org.uk/file/244/download?token=Y_kX2I5M).

implementation of EWTRs' 48-hour limit to junior doctors and perhaps its negative effect in training and the quality of patient care. Teesa (2009) [4] suggested that systematic changes within the NHS to fully implement the EWTRs have led to trainees having weaker relationships with their consultants and been neglected in order to meet hour restrictions of practice. Hence, to participate in solving this issue we have observed the outcomes of shared clinic (Consultant and Registrar) with regard to the clinical efficiency of specialty trainee (i.e., the quality of patient's care provided) and the educational competence of the trainee doctor and performance level.

As this new model of shared clinic in ENT department is novel, no comparative literature or guidelines were obtained or found to compare with the outcomes of this study. Thus, studies of similar nature in other surgical departments are required to fully assess these results.

5.2. Relevance of Data to the Study's Question. From the data collected and recorded, we were able to measure the clinical and the educational benefits of "one-to-one shared clinic" to ENT specialty trainee, hence answering the audit's question.

5.3. Clinical Outcomes of Trainee and Patient Care. The 7.5 percentage points improvement of CPEs (60% to 67.5%) for the ENT specialty trainee was an important indicator of the beneficial effect of this intervention. And by giving the fact that the specialty trainee during the period of the study was ST6 senior specialist registrar and experienced this improvement, the application of this intervention in more junior doctor (e.g., Core trainee 1) will perhaps increase this benefit.

Moreover, the reduction rate of OPEs of 7.5% (40% to 32.5) could suggest that the specialty trainee became more efficient in using the NHS resources and the need to follow up patients who actually need to be seen again by an ENT surgeon.

The total increase in the number of CPE and a reduction in the OPE could mean better clinical outcomes with respect to unnecessary clinic appointments being made without forgetting the fact that any final decisions by trainees were verified by the consultant in charge of the study.

5.4. Educational Outcome of the Specialty Trainee. WBA tool was used to assess the educational outcome of this intervention. Many different WBA methods exist, all created to assess the performance, attitude, and knowledge of trainee doctors.

In our study, Mini-Clinical Evaluation Exercise (which involves encountering patients for assessment of clinical

competence) and direct observation of procedural skills (which evaluates the performance of trainee in doing practical procedures) were only used in the assessment into relevant cases as our study was based in an outpatient clinic setting [5]. Further studies are encouraged to use most of these methods in further clinical settings to observe their effect in the educational performance of trainees. Table 2 demonstrates the minimum number of WBA types required for specialist trainees to conduct a year.

The joint committee on surgical training (JCST) has quantified the minimum number of WBAs to be completed a year being 40 in Wales [6]; during the shared clinics, 17 WBAs were completed in the trainee's e-portfolio progress assessment. This value may suggest an enhancement of the educational level of our trainee, increase in the clinical competence, and improvement from the developmental feedback.

Educational assessment of this intervention was illustrated by the outcomes of completed WBAs; however, WBAs' outcomes undergo a wide range of variability because of individual differences. According to Miller and Archer (2010) [7], this variability of WBAs' outcomes depends on the purpose of the feedback, recipients, and if they believe that change is possible. Consequently, our outcomes advocate a tendency of educational improvement to our specialty trainee by this intervention.

5.5. Limitations. The main limiting factor was outcomes bias as the study was not blinded in any way. As a result of that, outcomes of the second loop of the study (Solo Clinic 2) were questionable on whether the specialty trainee deliberately or subconsciously increased the number of CPEs or reduced the number of OPEs to obtain an improvement of the results. Secondly, training with the ENT consultant involved in this study was running in synchrony by other ENT consultant clinics being attended by the trainee (in a "solo clinic" format) so we cannot attribute all of this improvement to our study's "one-to-one consultant and specialty trainee shared clinic."

Thirdly, in spite of the reasonable number of patients included in this audit study (271 patients), a total of 143 patients were seen in solo clinics (Blocks 1 and 3). This has led to a statistically less significant p value of >0.1 . As explained above, if the total number of solo's patients was increased, then the study's increase power may have given outcomes of more statistical significance. Additionally, an imbalance of percentage of patients seen in 1st block (24%) and in 3rd block (29%) may affect the clinical outcomes of this intervention. This might be partially avoided in future studies by creating a preselected list of patients to be seen in that day of the study, as the number of those who have not attended these clinics cannot be predicted.

Fourthly, the clinical competence of each speciality trainee doctor varies considerably across ENT departments; hence, the clinical and educational outcomes before, during, and after the study may be affected by this variability. Also, if the outcome of this “one-to-one teaching clinic” was applied to different ENT consultants, different figures and statistics will perhaps be obtained. This is to do with how competent is the ENT consultant in conducting clinics and teaching trainees as well as the trainees’ ability and skills to fully appreciate these kinds of clinical teachings in the clinical settings.

Finally, it would have been optimal to compare the ENT higher surgical trainee who had 3 months of shared clinic with a comparable level trainee who did not have such exposure. However, our hospital is a small district general hospital that only has one ENT higher surgical trainee. A further multicenter study would look to compare these groups.

6. Conclusion

As explained above in the Introduction, the primary goal of this “shared clinic” intervention is to reduce the extensive concerns raised as a result of the implementation of EWTRs in the United Kingdom. Outcomes of this study may suggest that the educational and the clinical competence of our trainee doctors as well as the quality of patients’ care will be improved or at least maintained, after these new regulations, if this idea is fully implemented in a speciality like ENT or different surgical departments.

After this intervention, our ENT speciality trainee experienced the following:

- (1) Improvement of the rate of completed patients’ episodes
- (2) Reduction of the rate of ongoing patients’ episodes
- (3) Enhancement of the educational level illustrated by increased number of WBAs completed during the study

Considering the study’s design, enhancement of the trainee’s capability and competency was expected; however, as this idea is novel, further future studies are highly recommended to improve the design in order to prevent any “natural” improvement of the trainee’s level. Hence, we advocate consideration of specialty trainee doctors being “supernumerary” in the outpatient clinic.

Appendix

Pro forma used in data collection for each Tuesday afternoon clinic:

New:

Follow-up:

Total no.:

Patient Episode Rate

Complete Patient Episode

Discharged no.:

Surgical Waiting list no.:

Ongoing Patient Episode

Follow-up no.:

Abbreviations

EWTR:	European Working Time Regulations
CPE:	Completed patient episodes
DC:	Patient discharged from clinic
WL:	Patient placed on surgical operation waiting list
OPE:	Ongoing patient episodes
FLP:	Patient given follow-up appointment to ENT clinic
MSF:	Multisource feedback
Mini-CEX:	Mini-Clinical Evaluation Exercise
DOPS:	Direct observation of procedural skills
CbD:	Case-based discussion
ACAT:	Acute care assessment tool
To:	Teaching observation
NHS:	National health service.

Ethical Approval

Ethical approval was not required for the following reasons. (1) No patients’ details were documented or recorded. (2) This study involved an evaluation of practice and service.

Disclosure

Yaser Najaf is hereby the principal investigator and prepared to take responsibility for the integrity of the content of the manuscript. This work was not supported financially by any medical counsels but has been conducted under the supervision of Cardiff University, School of Medicine, as part of an assessment for final year medical students.

Conflicts of Interest

The authors declare that they have no conflicts of interests.

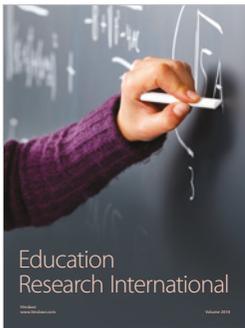
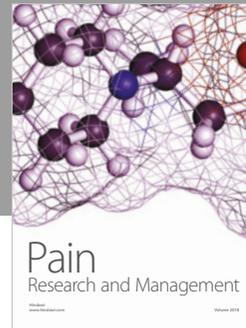
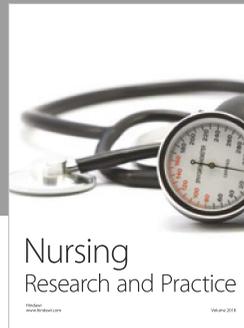
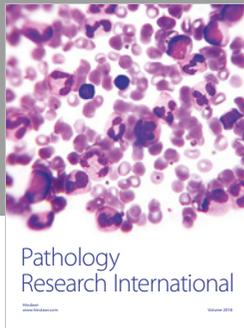
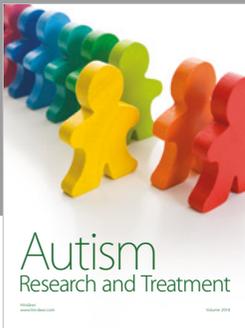
Authors’ Contributions

Yaser Najaf (5th year medical student) wrote the manuscript and performed data collection. Sam Fishpool (Speciality Trainee 3) performed data analysis. Harry Hunt (Foundation Doctor) performed data collection. Steven Backhouse (Consultant ENT) performed data analysis, data collection, and tutoring.

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