

# **Red, Amber Green Rating (RAG) of Oral and Maxillofacial Surgery (OMFS) Training Programmes in Europe – A pilot by OMFS trainers demonstrating a practical route to improve of OMFS training.**

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## Introduction

In 2021 the Oral and Maxillofacial Surgery (OMFS) Section of the Union of European Medical Specialists (UEMS) published its OMFS European Training Requirement (ETR)<sup>1</sup>. The OMFS ETR is a European curriculum written in the context of all the existing national OMFS curricula<sup>2</sup>. Not every European nation has a written curriculum, and not every curriculum has a clear syllabus or knowledge base. OMFS specific Quality Indicators for Training are defined in only a few nations<sup>3</sup>. The OMFS ETR and the Access based OMFS Experience Register<sup>4</sup> define all of the required elements of the best qualities of OMFS training programmes and trainers.

In their recently published paper<sup>5</sup> the European Oral and Maxillofacial Surgery Trainee Forum (EOTF) of the Union of European Medical Specialists (UEMS) created quality criteria for OMFS training programmes<sup>5</sup> based on the UEMS OMFS ETR. A total of 56 trainees from 32 nations took part in the Delphi process which defined these domains.

The EOTF defined three criteria within key domains and allocated Red, Amber Green (RAG) ratings to each of these criteria with the domains gathered into 6 tables. The headings of each table are:

- Table 1 - National Domains Defining OMFS Training
- Table 2 - Training Programme / Rotation
- Table 3 - Teaching and Education Programme
- Table 4 - Training Placement
- Table 5 - Record of Training Progression and Activity
- Table 6 - External Assessment of Training Programmes

The purpose of this paper is to ask OMFS trainers to grade OMFS training in their nation using the RAG criteria defined in the EOTF paper.

## Method

Of the 31 nations who are full members of UEMS<sup>6</sup> there are 28 who have a medical specialty of OMFS defined by treaty or in Annex V of Directive 2005/36<sup>7</sup> of whom 26 have OMFS training programmes. Denmark, Iceland and Sweden do not have OMFS as a medical specialty. Luxembourg and Malta do not have OMFS training programmes.

Using the tables and domains defined by the European OMFS Trainee Forum in their BJOMS paper, forms were created and circulated to a trainer (usually the head of delegation to the OMFS Section of UEMS) in the 26 UEMS nations.

As well as completing the RAG table in the tables, each delegate was asked, in no more than 50 words, to outline changes to OMFS training in their nation which were planned for the near future.

To allow analysis of the returns, the RAG ratings were converted to numerical figures. The number attributed to Green was 3, Amber was 2 and Red 1. Adding up the numbers across all the domains then dividing by the number of domains generated a percentage score with all Green = 100%, all Amber = 66% and all Red = 33%. For Table 1 there were additional two possible scores for dual degree OMFS (DOMFS) nations which meant the denominator for these rows was 10 rather than 8.

## Results

Replies were received from 24 (92%) of the 26 UEMS Nations who met the criteria of having a medical OMFS specialty and an OMFS training programme. Cyprus and Bulgaria did not return forms. The results were tabulated in Excel® and processed using Winstat®.

The total amount of data returned was extensive and complex. It is published on the OMFS Section website<sup>8</sup> and uploaded as additional information on the BJOMS website.

The overall mean score across 6 tables and 46 domains was 80%, with a range of 67% to 98%.

**Table1 National framework** of OMFS had 8 domains with an additional 2 for dual-degree OMFS nations – average of 79% (range 60%-100%).

**Table 2 Training programme/ rotation** has 11 domains – average 79% (range 63%-100%)

**Table3 Teaching/education programmes** has 6 domains – average 85% (range 56%-100%)

**Table4 Training placements/unit/timetable** has 9 domains – average 81% (59%-100%)

**Table5 Records of Training Progression/Logbooks** has 4 domains – average 79% (range 42%-100%)

**Table6 External assessment of the training** has 6 domains – average 80% (range 67%-98%)

By colour coding the data in the same way as the original paper<sup>5</sup>, an overview can be obtained by looking at the overall colour distribution seen on Figure 1.

No nation was green across all the tables and all domains.

### Collated Results from all tables

Collecting the total scores for each table from each nation Table A is generated. In this combined table, the colours are coded by the value against the range within the whole table. The colours have been generated by Excel®'s conditional colouring. They do not map exactly to the three colours in the original tables because the numbers are average figures for each row. This conditional shading provides an 'at a glance' representation of the mean colour for each row in the table. The purpose of the colour coding, like the original scoring, is formative rather than summative. They provide an overview for each nation in each table. The final column gives an estimate of the overall grading of OMFS training within that nation across all 6 tables.

By considering the colour range in this collated table and also the collage of individual tables which are shown in Figure 1, each nation can consider how they could improve their training. Figure 1 gives a fuzzy impression of the Red Amber Green balance of scores across Europe on the individual tables. We have not included the domain descriptors, just the RAG colours of the returns. The detailed data returned from each nation are accessible on the OMFS Section Website on the page about OMFS Training in Europe<sup>8</sup>.

The average scores and statistics for each domain suggests that the grading system is balanced across the domains assessed.

Figure 2 is a box and whisker charts generated by WinStat® where the mean (blue line), the maximum and minimum (red crosses), the ends of each black whisker represent the 5<sup>th</sup> and 95<sup>th</sup> centiles and the edges of the boxes indicate the 25<sup>th</sup> and 75<sup>th</sup> centiles.

Looking at the boxes and whiskers, they are not symmetrically distributed either side of the mean. This shows that the distribution is not 'normal' about the mean but has a bias for each domain. All the tables except Table 3 have boxes and whiskers which have a longer tail downwards below the mean for all tables. The exception is Table 3 the teaching and education programme. For Table 3 where the box extends upwards and the whisker downwards. This shows that most of the education and training programmes are good, but those which are less good are measurably so.

Looking at histograms of the scores, these data is shown in Figure 3. Figure 3 shows the histogram of the average results for tables 1-5 are roughly curves. These match the black line of the 'Totals' shown in black. The red line Table 6 has a different pattern representing external assessment of training. It differs from the other Tables in both the Box and Whisker chart and also in the histogram. In the Box and Whisker Table 6 is the most compact. In the histograms Table 6 is unusual in that it has a tri-modal distribution. The figures suggest that a few nations have extensive external assessment of training, many have a little external assessment of training and a few have none.

Repeating again that the data is created to be formative rather than summative, we share the data from the total scores column of Table 1 represented in a 'heat' map for European nations seen in

Figure 4. The aim, for the future, would be for the 'heat' to increase.

## Comments

Comments were received from Croatia, Czech Republic, Finland, Germany, Greece, Latvia, Lithuania, Spain, and the UK. They are listed here in no particular order. They show common targets for improvement across European OMFS training programmes, and common problems which persist.

- Training Record/portfolio to measure progress. We intend to implement universal online record/logbook for all residency programmes in near future.
- Feedback of training is necessary and full ETR incorporation to the curriculum will needed.
- The tracking of training progression and activities could be enhanced. Implementing a universal online training portfolio would allow for better progress assessment. A universally accessible eLogbook would provide an effective tool for reviewing competency development.
- The population pyramid shifts towards more elderly and the need for oral and maxillofacial surgeons per capita increases. Sharpening the curriculum to meet the more pronounced needs in treatment with this elder segment should be addressed.
- Implement a formal annual external audit of each training center.
- Implement protected study time (at least 6 hours per week) and offer more opportunities to trainees to work on research.
- Implement a formal annual external audit of each training center.
- We could improve summative review with indicative numbers required to complete training.
- And to initiate trainee and trainer universal feedback survey after each training rotation.
- External assessment and review must be introduced for teaching portfolio and training records
- To increase awareness of ETRs by our trainees and adaptation of their training curriculum.
- To ensure that study time is protected within working hours.
- Creation of a universal and uniform online training portfolio and logbook for all trainees to analyze and compare their training.
- Experience Register / logbook
- Re-evaluate training unit accreditation criteria
- Accredited new training units
- Add new elements to training based on OMFS ETR – aesthetic surgery
- Direct recruitment to units/training programmes promotes competition and flexibility. Excellence, attracts excellence
- Central recruitment, with allocation of fixed numbers of trainees reduces competition and therefore quality. There is a loss of quality when ambition and hard work are sacrificed at the altar of fairness.

## Discussion

Nudge theory<sup>9</sup> outlines an approach to behaviour modification whereby setting achievable and understandable targets can result in measurable improvements. Red Amber Green (RAG) coding had transferred from international traffic signals<sup>10</sup> to be an effective approach to nudging change in behaviour. Defining domains and using RAG rating to compare training and curricula in medicine and surgery has been effective nationally<sup>11</sup> and internationally<sup>12,13</sup>.

Quality indicators of OMFS training are often binary such as those defined by the Joint Committee for Specialty Training (JCST) in the UK<sup>3</sup>. Publications on quality indicators in surgical training have included using Delphi criteria<sup>14</sup>, analysing log-book data<sup>15–17</sup>, and using national surveys<sup>18</sup>.

Surveying trainers<sup>19</sup> and trainees<sup>20</sup> also give indicators of the quality of training. 'The UK the medical regulator, the General Medical Council (GMC) requires all trainees and trainers to respond to a

survey annually. If the results of a survey are reviewed regularly, changes in training can be tracked, whether positive or negative. Tools like surveys are useful in tracking changes and comparing programmes in the same specialty or across surgery, but require thoughtful analysis<sup>21</sup>. GMC National Trainee Surveys do not report hospitals where there are fewer than 6 trainees, which is the majority of OMFS units.

The OMFS Section runs a formative assessment each year in September supported by the European Association of Cranio-Maxillofacial Surgeons who are helped by an unconditional grant from Medartis®. This Pre-Specialist Assessment<sup>22–24</sup> allows individual trainees to track their level of knowledge but results are only accessible to the trainee. The results do not link formally into training programmes or records of progression.

This small pilot of using RAG criteria for OMFS training programmes appears to be effective, pragmatic and understandable. Statistical accuracy of the returns could have been improved by widening the number of responding trainers, but this was not the purpose of the process. Rather, the purpose was to assess if the nature of the domains and the criteria in each colour were comprehensible and practical. All those returning data were able to do so without additional help.

## Next Steps

### Test your own OMFS training

This project has shown that it is possible to define standards and for trainers to use these criteria to map OMFS training in their nation against these standards. The next step is to create an online resource for trainees to self-grade their training.

The European Psychiatry trainees<sup>25</sup> have created a 'Test Your Own Training' resource based on the Psychiatry European Training Requirement (ETR) which is easy to use and effective in use.

A similar facility will be created by the OMFS Section of UEMS using tables 1-6 to create questions with drop-down options. The data will be recorded without personal information but individual trainees will be given the option of downloading or printing their own summary. These data, augmented by the peer reviewed papers can be used in discussion with local training units, regional rotations or national programmes.

The national data will be collected and reviewed at the OMFS Section meetings in summary form. There will be active recruitment for trainees and trainers to add their data.

### Review of changes to OMFS training by repeating this snapshot - 5 year rolling programme.

The current data is interesting as a one off. The value of the process will be shown if sharing this information promotes improvement of OMFS training in individual nations. If, cumulatively, across Europe there is a collective improvement, this would be even more pleasing. The OMFS Section of UEMS will ask its delegates to review their national OMFS training programmes on a 5 year rolling programme. These data will be published alongside the results of the "test your own OMFS training" data.

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