

Survey of core medical trainees in the United Kingdom 2013 – inconsistencies in training experience and competing with service demands

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ABSTRACT

There is currently considerable concern about the attractiveness of hospital medicine as a career and experiences in core medical training (CMT) are a key determinant of whether trainees continue in the medical specialties. Little is understood about the quality and impact of the current CMT programme and this survey was designed to assess this. Three key themes emerged. Firstly, the demands of providing service have led to considerable loss of training opportunities, particularly in outpatients and formal teaching sessions. Trainees spend a lot of this service time doing menial tasks and over 90% report that service takes up 80–100% of their time. Secondly, clinical and educational supervision is variable, with trainees sometimes getting little consultant feedback on their clinical performance. Finally, 44% of trainees report that CMT has not prepared them to be a medical registrar and many trainees are put off acute medical specialties by their experiences in CMT.

KEYWORDS: Core medical trainees, CMT, core medical training trainees, training experience, service provision, supervision

Background

In the UK, postgraduate training in the medical specialties for doctors has undergone large changes over the past decade. Pre-registration house jobs and senior house officer (SHO) rotations have been replaced by a two-year foundation training programme followed by two years of core medical training (CMT). Recent work by several organisations has raised some concerns over the effectiveness and quality of current training.^{1,2} In addition, there have been concerns over the negative impact of the European Working Time Directive (EWTD) on the quality of junior doctors' training.^{3–7}

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In a national survey of CMT trainees who were planning to change specialty (6.4%), three-quarters were deterred by the prospect of working as the general medical registrar on call.⁸ Most CMT trainees (61%) have reported that the workload of the medical registrar is 'heavy', whereas 37.4% consider it to be 'unmanageable'.² Medical registrars have commented on a sense of low morale amongst junior doctors and general medical registrars, much of which is the result of feeling undervalued.⁸

The purpose of this survey was to seek trainees' views of the quality of CMT throughout the UK by asking CMT trainees how they view their training programmes, and then to assess what changes are necessary to improve the quality and experience of CMT training.

Methods

An electronic survey using Vovici software was emailed to all CMT trainees registered on the Joint Royal College of Physicians Training Board (JRCPTB) database. A copy of the questionnaire is available at: www.rcpworkforce.com/se.ashx?s=253122AC3FC24E9F. The survey was sent out on 14 June 2013 with reminders sent out after 3 and 4 weeks. The survey was closed after 6 weeks.

Demographic data were collected on year of training, deanery of CMT (accepting that responsibility of training changed to Local Education and Training Boards on 1 April 2013), deanery of foundation school, and gender.

Training data were collected on:

- > the current structure of training, length of attachments
- > experience of common medical conditions and procedures (using the format of a previous survey)⁹
- > the structure and usefulness of educational supervision
- > the electronic training portfolio
- > working patterns, including the amount of time spent in acute medicine, balance of service and training
- > out-patient attendance and training
- > structure and delivery of teaching sessions, including simulation training
- > career choices and future intentions
- > effectiveness of CMT as preparation to be a medical registrar.

Data were analysed either for all trainees or for those at the end of their second year of CMT, depending on the question asked.

Table 1. Proportion of CMT trainees who had stayed in the deanery in which they had undergone foundation training.

CMT deanery	Number of core medical trainees who filled in the survey	Proportion of trainees undergoing CMT training in the same deanery as their FY2 year (%)
Defence	3	100
East Midlands	56	66
East of England	62	40
Kent, Surrey and Sussex	41	56
London	141	63
Mersey	31	77
North Western	48	67
Northern	32	72
Oxford	26	58
Severn	28	57
South West Peninsula	24	75
Wessex	33	48
West Midlands	63	67
Yorkshire and Humber	79	48
East of Scotland	5	60
North of Scotland	11	82
South East of Scotland	16	69
West of Scotland	33	73
Wales	47	53
Total	779	61

CMT = core medical training; FY = foundation year. 71 CMT trainees did not state their deanery and 21 responded 'other'.

Table 2. Experience of cardiac arrests by CMT trainees at the end of CMT year 2.

Number of cardiac arrests	0	1	2	3	4	≥5
Number 'actively involved with'	0.3%	0.6%	1.4%	5.1%	3.9%	88.7%
Number 'personally led'	25.5%	17.5%	14.3%	15.2%	9.2%	18.3%

CMT = core medical training.

Table 3. Experience of common medical procedures by CMT trainees at the end of CMT year 2.

	Never observed	Observed never performed	Performed under supervision	Performed independently
Lumbar puncture	–	0.6%	4.2%	95.2%
Diagnostic pleural aspiration	–	0.3%	19.0%	80.7%
Intercostal drain	0.8%	7.3%	48.7%	43.1%
Diagnostic ascitic tap	0.6%	0.6%	4.5%	94.4%
Therapeutic paracentesis	2.0%	3.1%	14.9%	80.0%
Non-invasive ventilation	1.7%	14.1%	25.7%	58.5%
External cardiac pacing	15.8%	29.9%	32.5%	21.8%
Central venous cannulation	3.1%	19.4%	44.5%	33.0%

CMT = core medical training.

Results

Response rates

A total of 2,724 trainees were emailed the survey and 871 responses were received, a response rate of 32%. Of the responses, 456 were from CMT trainees at the end of their first year of training and 392 from CMT trainees at the end their second year; response rates were 52% and 45%, respectively. Of respondents, 42% were male and 58% were female. Responses were obtained from all deaneries in England, Wales and Scotland with response rates for the nations of 36%, 38% and 31%, respectively.

Movement between deaneries

A comparison of CMT deanery with foundation school deanery (FY2 year) showed that 61% of trainees remained in the same deanery. Regions where more than three-quarters of trainees stayed following foundation training include Defence, the north of Scotland, Mersey and south west Peninsula. Regions where less than half of trainees continued their training in the same deanery include East of England Wessex and Yorkshire and Humber. The proportion of trainees that had stayed in the same deanery is shown for each deanery in Table 1.

Views on the structure of training

53% of respondents would prefer to keep CMT at 2 years, whereas 42% would like it to be extended to 3 years.

83% of CMT trainees had attachments that were 4 months in length, whereas 17% had attachments that were 6 months long. 68% stated that placements should be for 4 months and 32% thought attachments should be 6 months in length. Of the trainees who were doing 6 months attachments, 53% felt that this was the appropriate attachment length.

Experience of conditions and procedures

The experience of cardiac arrests by trainees at the end of their second year of CMT is shown in Table 2. 89% of those at the end of their CMT had taken part in the management of 5 or more arrests. However, 1 in 10 doctors at the end of CMT had attended 4 or less cardiac arrests throughout their CMT and 1 in 4 had never led an arrest.

The experience of different procedures gained by those at the end of their second year of CMT is shown in Table 3. 16% of CMT trainees had never observed external cardiac pacing and only 33% and 43% of CMT trainees had independently performed central venous cannulation and inserted an intercostal drain, respectively. One in five CMT trainees had not performed therapeutic paracentesis. Nevertheless, clinical independence in performing these procedures is desirable according to the GMC approved curriculum for CMT.¹⁰ One in five CMT trainees had not independently performed diagnostic pleural aspiration, which is an essential CMT procedure.

The experience of diagnosis and management of different conditions by those at the end of their second year of CMT is shown in Table 4. One in five CMT trainees at the end of CMT year 2 have not diagnosed and managed acute liver failure. Over 10% of trainees have not diagnosed and managed common

conditions such as diabetic ketoacidosis, acute stroke and seizure.

Educational supervision

The number of educational supervisor meetings held with CMT trainees per year is shown in Fig 1. The median number of meetings was four, although the most frequent response was three. When asked how many meetings they would prefer, 69% of trainees would like four or more each year and 38% would like 6 or more.

6% of CMT trainees reported their educational supervisor meetings lasted less than 10 minutes, 48% reported meetings lasting 10–20 minutes, and 46% more than 20 minutes.

The length of attachment to a single educational supervisor was 12 months for 45% of trainees, 4 months for 23%, 24 months for 21% and 6 months for 7%. 42% stated that 12 months was the ideal duration and 40% felt that 24 months was ideal. Only 11% of trainees stated 4 months was the ideal length. 78% of trainees believed that a trainee should be able to elect to stay with the same supervisor for a second year.

e-Portfolio

53% of trainees spent less than 30 minutes on their e-Portfolio per week. 36% spent 30–60 minutes, 9% spent 1–2 hours and 1% spent more than 2 hours on their e-Portfolio per week.

Experience of acute medicine on call

There was a wide variation in the exposure of trainees to general or acute medical on call, but close correlation between experience and the desired exposure. The proportion of training rotation that actually involved acute on call work is shown in Fig 2, together with the responses to the question ‘what percentage of CMT should contain an acute on call component?’.

Table 4. Experience of common medical conditions by CMT trainees at the end of CMT year 2.

	Diagnosed and managed
Acute myocardial infarction	92.6%
Acute pulmonary oedema	94.6%
Acute exacerbation of chronic obstructive pulmonary disease	94.9%
Acute asthma attack	90.7%
Acute upper gastrointestinal bleed	91.2%
Acute liver failure	78.8%
Diabetic ketoacidosis	87.5%
Acute stroke	84.7%
A seizure	89.2%
Acute kidney injury	93.5%

CMT = core medical training.

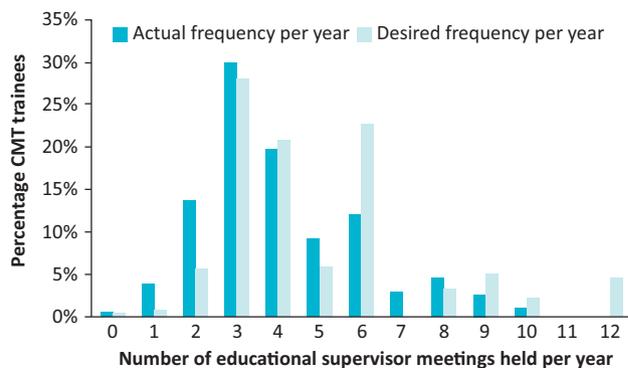


Fig 1. Actual frequency of educational supervision meetings and ideal frequency of meetings.

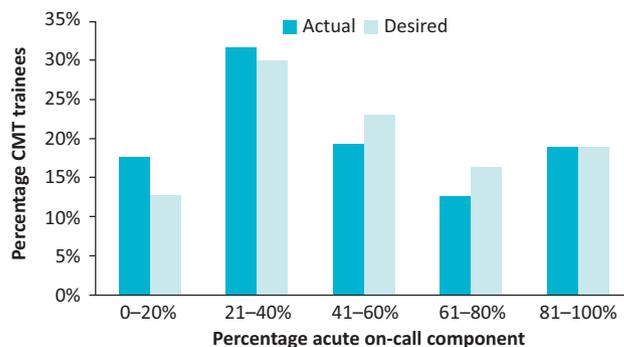


Fig 2. Proportion of CMT rotation containing an acute or general medical on call component, actual and desired. CMT = core medical trainee.

58% of trainees stated that the number of general medical on calls should stay the same, 22% stated that they should increase and 16% stated that they should decrease.

71% of trainees rated feedback from seniors as very valuable, but only 12% of trainees reviewed all the patients they admitted with a senior colleague. 45% of trainees stated that they reviewed 40% of patients or fewer with a senior colleague.

Balance of training and service

When asked what proportion of time was spent ‘on service’, 91% of trainees reported spending 80–100% of their time on service rather than training. Only 2% spent less than 40% of their time on service.

Tasks performed in an average weekday shift

A wide spread of tasks were reported as being performed during an ‘average weekday shift’ (Fig 3). Using median values, the average CMT shift involves writing three discharge summaries, taking blood three times, filling in ten forms and handling ten phone calls.

Outpatient clinics

36% of trainees attended ten or fewer outpatient clinics per year, and 85% attended 20 or fewer. Only 29% of trainees felt that 20 or fewer clinics was the right number, and 71% felt that they should attend more (Fig 4).

There was an even spread of the number of patients seen by trainees in clinic, the median number being four (Fig 5).

73% of trainees had their own clinic room to use when attending outpatients, 78% being near their consultant, and 79% saw patients independently.

89% of trainees found attending outpatient clinics either valuable or very valuable, but 81% of trainees reported that they were frequently prevented from attending outpatient clinics because of ward commitments and only 4% said that this interference never occurred.

Local teaching sessions attended per year

94% of trainees reported that their local hospital held local teaching sessions, but there was a large variation in the number

of teaching sessions provided per year from 0 to 60 (Fig 6). 41% of CMT trainees were frequently prevented from attending local teaching because of ward commitments.

74% of CMT trainees reported that their deanery held regional teaching sessions, but 36% of trainees were frequently prevented from attending. 71% of trainees reported attending between 1 and 10 sessions per year, whereas 28% of trainees attended between 11 and 20 sessions per year.

Type of teaching available in hospitals

In their hospitals, 69% of trainees reported weekly meetings, 47% reported PACES training, 32% reported formal procedural skills teaching, and 28% and 33% reported simulation training provided locally and regionally, respectively.

Of CMT2 trainees, 28% had no simulation training locally and 39% had none regionally. Approximately a quarter of trainees had one local and one regional simulation training session during their 2-year CMT programme (23% and 27%, respectively) (Fig 7).

Specialty choices

Table 5 shows the proportion of CMT trainees planning to pursue the specialty that they had chosen before starting CMT. Specialties such as dermatology, palliative medicine and neurology are some of the more popular choices that CMT trainees most often wanted to pursue having made these career choices prior to starting their CMT; proportions of trainees who were still considering these specialties were 87%, 76% and 70%, respectively. 47% of CMT trainees had changed the specialty that they wanted to pursue since starting their CMT. The choices of specialty that were most likely to be abandoned were acute and general medicine, gastroenterology and renal medicine. Of those trainees who had originally chosen these careers, only 13%, 34% and 35%, respectively, wanted to continue to apply for these specialties after starting their CMT.

44% of CMT2 trainees who are at the end of the programme do not feel prepared to be a medical registrar. One in five CMT trainees report that they are not satisfied with their choice of medicine as a specialty, although 78% of CMT trainees still plan to pursue a career in a medical specialty after completing the CMT programme. 15% were unsure whether to pursue a career in medicine and 7% plan to change specialty.

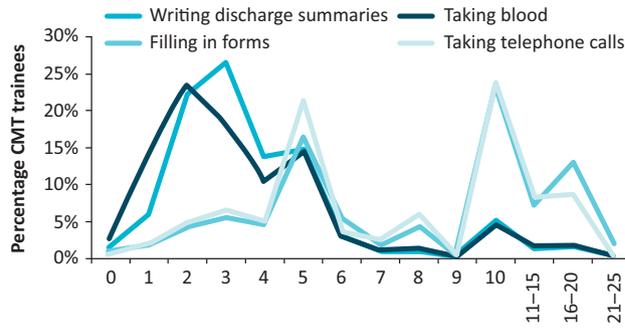


Fig 3. Frequency of common tasks in an average CMT weekday shift.
CMT = core medical training.

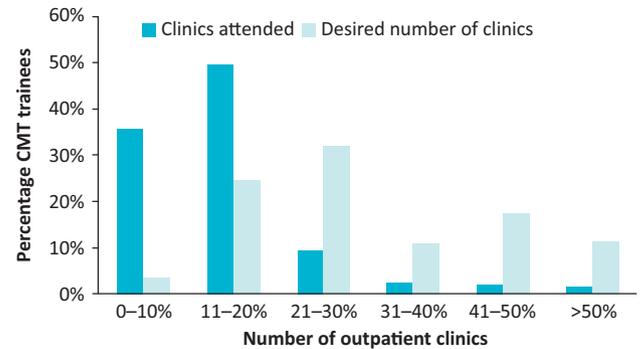


Fig 4. Number of outpatient clinics attended per year and number of clinics that trainees would prefer to attend.

Free-text comments

Out of 89 free-text comments on why trainees had decided to abandon the specialty they originally wanted to pursue at the start of CMT training, there were 70 (79%) negative comments and 19 (21%) comments, which suggested that their reasons were due to personal choice. Several main reasons emerged to explain why trainees decided to change their chosen specialty, and these fell into three categories: poor quality of training, not feeling valued and the impact of role models.

Poor quality of training:

- > 'It feels more like a service post than a training post.'
- > 'Current CMT is not a training programme. I feel completely disillusioned by it and this is why I have changed to GP.'
- > 'Poor quality of training and lack of career progression as evident by the fact that CMT doctors are doing the same tasks as FY1 doctors on a regular basis.'
- > 'Other training programs offer more training.'

Not feeling valued:

- > 'A general sense of not feeling valued as a trainee.'
- > 'I don't want to be the medical registrar on call as it is an exceptionally challenging, understaffed, demoralising job.'

Impact of role models:

- > 'Unhappy seniors in some medical specialties.'
- > 'Good role models in other specialties.'

Discussion

The survey response rate of 32% is much lower than that of the annual national GMC survey, which has a response rate of approximately 95%. In part, this is probably because there was no compulsion to complete the survey. A response rate of 32% is typical for a random response¹¹ and the responding one-third of doctors may have had strong views about the quality of their training. Typical response rates for surveys of doctors (e.g. the BMA survey of trainees) are usually around 15%. We cannot claim that the results presented are truly representative of all doctors in CMT training, but our survey did probe more deeply than the GMC survey, and we believe the results do highlight some key problem areas.

This survey has identified some fundamental problems with the CMT programme. There has been a lack of continuity in supervision and training, overwhelming service provision at the expense of training time (more than 90% felt that their job was 80–100% service work) and lack of preparation for the role of a medical registrar. The results come at a time when several key reports on the future of the NHS have been published and the findings of our survey chime well with those reports.

The *Future Hospital Commission* report recommends that medical consultants should allocate appropriate time to working in acute and/or (general) internal medicine in the Medical Division to provide leadership, supervision, education and training.¹² Three-quarters of CMT trainees reported that gaining feedback from consultants is an excellent learning opportunity. Furthermore, a high proportion of CMT trainees did not receive feedback from consultants on the patients that they had reviewed. We assume that these patients were all reviewed by a senior colleague but just not together with the CMT trainee, although the survey did not ask this question. Many trainees felt that educational supervision was limited, with approximately half of all educational supervisor meetings lasting just 10–20 minutes. However, there is currently no specific college or national guidance for the optimal duration of an educational supervisor meeting, and this is something that needs to be addressed. Time dedicated to teaching and giving feedback to trainees is required by the General Medical Council,¹³ but this requirement is frequently not being met. It is crucial that consultants are allocated time to supervise, teach and give feedback to trainees.

A high proportion of trainees reported that ward commitments prevented them from attending clinic and CMT teaching sessions. Outpatient experience within CMT is currently inadequate, with many trainees attending fewer than ten clinics in a year. Given that almost all medical specialties involve a large amount of outpatient work, this lack of experience, which almost certainly results from the pressures of ward work, is a missed training opportunity. Donald Berwick's report *A promise to learn – a commitment to act*¹⁴ states that all staff in the NHS should be supported at work and given the opportunity to expand their skills. The conflict between service and training is a barrier to this for CMT

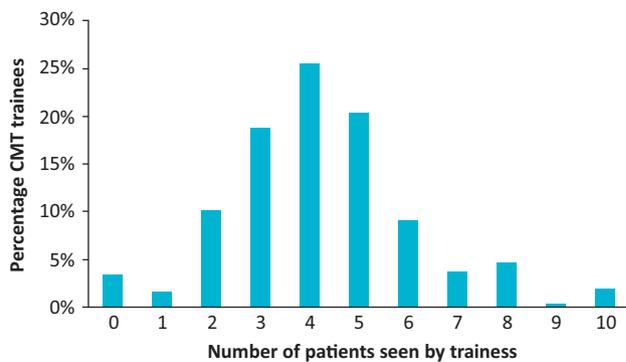


Fig 5. Number of patients seen in each outpatient clinic.

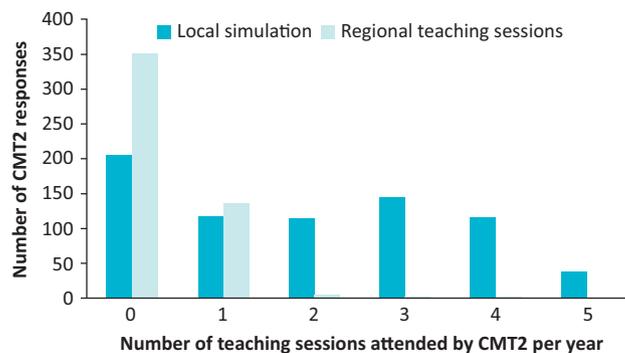


Fig 7. Number of local and regional simulation sessions attended by CMT2s per year. CMT = core medical training.



Fig 6. Number of local teaching sessions per year.

trainees, and considerable changes to the ways wards are staffed are needed to allow appropriate training of the future medical workforce. Trainee attendance at training sessions also needs to be supported by seniors, so that trainees are able to progress through the programme.

The most useful setting for gaining experience on how to manage acutely unwell patients is out-of-hours.⁹ The reduction in working hours following the New Deal and the EWTD has, however, resulted in trainees having less time to gain experience with emergency situations and procedural skills, which has been highlighted in this study. Simulation training may be one solution to this loss practice in certain skills. Assessments of both virtual patient and technology-enhanced simulation have consistently shown large, statistically significant benefits in the areas of knowledge, skills, and behaviours in the context of actual patient care.^{15,16} The direct benefits to patients (ie reductions in the length of stay, major complications and mortality) are smaller but still significant.¹⁷ There is good evidence that simulation training should be available to all CMT trainees. This survey suggests that simulation training is underutilised currently and, again, that service workload prevents trainees from accessing this training.

The needs of hospitals are changing with an ageing population and with patients who are presenting to hospital with increasing co-morbidities. The *Shape of Training* report advocates expanding the number of trainees working in (general) internal medicine by allocating all trainees in medical specialties to participate in the acute take.¹⁸ This survey suggests that such a move will be unpopular with some

trainees: specialties that currently do not have a (general) internal medicine component after CMT are more often pursued by those who had chosen them before starting the programme. The reasons for this are unclear but may relate in part to the perception of the medical registrar role, the work–life balance offered by less acute medical specialties and the lack of exposure to more acute specialties in the first year of foundation training.

Both the *Shape of Training* report and the *Future Hospital Commission* report propose increasing the workforce in internal medicine in order to decrease the pressures on medical registrars and their team members. A less hard-worked medical registrar with a manageable workload, who enjoys their job because they feel valued and have plenty of training opportunities, will be good role model for foundation and CMT trainees who have decided to pursue a medical career. Changing the structure of postgraduate training could, however, take over 5 years to implement. Responding to the concerns raised by CMT trainees is important and in order to continue to have a cohort of doctors applying for (general) internal medicine jobs, CMT and further medical training, urgent changes must be made to allow medical specialties to become an attractive career choice.

The *Shape of Training* report has suggested that training placements move towards a six-month duration, which less than a third of the trainees in our survey would prefer.¹⁹ We believe this could be because trainees feel they must experience a variety of specialties and that by making placements longer, they will experience fewer specialties in the current two-year training programme. One solution could be to extend the length of CMT, and just over half of CMT trainees would like a 3-year programme. This would provide a larger workforce to share the high workload at this grade. In addition, the extra training time would allow trainees to gain more experience and confidence in preparing to becoming a registrar. Nevertheless, more than half of CMT trainees would prefer to keep CMT at two years, and extending the programme would come at a cost in the current climate. Ultimately, it is important that the role of a CMT trainee is distinguished from that of a foundation trainee, and that each year of progression through the programme should come with a feeling of increased trainee

Table 5. Proportion of CMT trainees planning to pursue a specialty that they had chosen before starting CMT.

Specialty preference	Number of trainees choosing the specialty before starting CMT	Proportion of CMT trainees planning to pursue a specialty that they chose before starting CMT (%)
Acute and general medicine	38	13
Cardiology	82	55
Clinical genetics	6	67
Clinical pharmacology and therapeutics	2	100
Dermatology	30	87
Endocrinology and diabetes mellitus	22	64
Gastroenterology	58	34
Genito-urinary medicine	12	92
Geriatric medicine	64	58
Haematology	45	60
Hepatology	4	75
HIV/AIDS	5	60
Immunology	1	100
Infection and tropical medicine	5	80
Infectious diseases	22	41
Intensive care medicine	7	29
Medical oncology	46	48
Medical ophthalmology	1	100
Neurology	40	70
Palliative medicine	40	76
Renal medicine	19	35
Respiratory medicine	33	49
Rheumatology	34	41
Stroke medicine*	53	–

AIDS = acquired immunodeficiency syndrome; CMT = core medical training; HIV = human immunodeficiency virus.

*Of those CMT trainees who completed the survey, zero had planned to pursue a career in stroke medicine.

confidence in their ability to work independently and safely as a medical registrar.

The trainees who completed the survey reported that the majority of their time is spent doing service work. It is important, however, not to discount how valuable service provision can be for learning on the job, provided that time to train and to receive feedback is available and learning opportunities are not lost. It may seem that the older system of an apprenticeship style of training is preferred, and taking good examples from the previous system and adapting these to suit the modern training environment would seem a sensible option. If the present situation is not resolved, recruitment to CMT will continue to decrease and medical specialties will become even more difficult to recruit to. Urgent changes must be made to improve the quality of training for CMT trainees who are the future consultants of our medical workforce. ■

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