What does current diabetes and endocrine speciality outpatient training look like and what will change? Observations from a single training region in England

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Abstract

Introduction: Diabetes and endocrine speciality training in the UK has traditionally been lasted five years but moved to a four-year model in 2021 with the introduction of the Internal Medical Training (IMT)3 year programme. Here we aim to review the case mix of outpatients seen by a single diabetes and endocrinology Specialty Registrar (SpR) during clinical training and offer insights into the range of patients seen. We will also review the NHS ePortfolio entries for Diabetes and Endocrinology and for General Internal Medicine to establish how many self-entered forms, assessments (completed and expired) and summary assessments are typically undertaken before certification of completion of training (CCT).

Methods: A diabetes and endocrinology registrar (JD) kept an anonymised log of all outpatient consultations from starting speciality training as an ST3 in August 2017 up until his CCT was awarded in May 2023. Duration of training was extended because JD was a less than full time trainee (LFTT), with a period of shared parental leave. Non-patient-identifiable data included diagnosis or presenting complaint of patient seen, type of clinic and date of clinic between August 2017 and May 2023. Following CCT, NHS ePortfolio data were reviewed to establish NHS ePortfolio entries, including the number of requested assessments and number of completions.

Results: For the last 18 months of training, approximately 40% of JD's working time was spent on general medicine and 60% on diabetes and endocrinology. Over the total time of training from 2017 to 2023 JD had a total of 4,150 consultations in outpatient clinics. There were 1,347 consultations in the endocrine clinic and 2,803 consultations in the diabetes clinic. There were 472 ePortfolio entries: 158 of these were self-entered, 284 requested assessments completed and 30 summary or progression assessments. 130 requested assessments expired before completion, giving a response rate of 68.5%.

Conclusion: Observations from a single training region in England show that five years of diabetes and endocrinology registrar training provided a broad mix and depth of outpatient experience. The greater number of patients seen in diabetes clinic represents the requirement for service delivery in the area and subspecialist interest being developed. The change to four years' speciality training is likely to represent around 800 fewer consultations as a speciality trainee in diabetes and endocrinology. The reduction in training opportunities could be addressed through having more protected time for specialist teaching clinics, particularly pump and technology clinics. A large amount of evidence from both the trainee and assessors is required in NHS ePortfolio to achieve CCT in diabetes and endocrinology and general internal medicine. Although the data come only from one trainee and one region, they can provide a point of reference for future analysis of the effect of four years' speciality specific training on the breadth of training and a stimulus for other trainees and other region to reflect and analyse their rota and data.

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Key words: registrar, training, curriculum, ePortfolio, logbook, CCT, assessment

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Introduction

Diabetes and endocrine speciality training in the UK NHS historically may have been as long as 8-9 years but was standardised in the 1990s with a five-year training programme. In 2022, it moved to a four-year model with the introduction of the IMT3 year prior to entering speciality training. Here we aim to review the case mix of patients seen by one diabetes and endocrinology specialty registrar (SpR) during clinical training in outpatient clinics in order to identify the variety of training offered and what impact the reduction in speciality training time may have. Whilst maintenance of logbooks of speciality clinical experience is mandatory in surgical specialities,[1] their use is not widespread in medical speciality training. This makes monitoring and tracking training experience from the number of patients seen alongside curriculum competencies more difficult. There are many competing pressures on speciality training, balancing the need for service delivery and training, and speciality experience with general internal medical (GIM) training

experience. Furthermore, trainees are expected to collect evidence for annual appraisal in the form of workplace assessments, which requires sending tickets to a supervising consultant or a colleague for them to complete. Here we aim to provide an overview of outpatient speciality training experience within diabetes and endocrinology of a single registrar with training experience at a large teaching hospital and district general hospital over a six-year period of less than full training (LTFT) (equivalent to five years' full time training). The purpose is to gain insights into the typical case mix during a five-year training period, reflect on the adequacy of speciality training and make recommendations for future training adaptations, especially given the recent shift to a four-year model. We also aim to quantify the amount of evidence that a registrar may be expected to produce for completion of training, and ascertain what proportion of ticketed assessment forms requested are completed.

Methods

JD kept an anonymised patient log when starting speciality training. The data gathered were date, diagnosis and type of clinic (including virtual or face-to-face). No inpatient data were collected due to time and logistical difficulties. Reporting inpatient data might also have compromised the article's overall aim of evaluating outpatient experience. The rota template was reviewed to identify the split in time between speciality (diabetes and endocrinology) and GIM, and the training portfolio was analysed.

The training rota in East Midlands South rotation was split across four years in University Hospitals of Leicester (UHL) and one year in a district general hospital (DGH). Data were collected at the UHL between August 2017 and August 2019, Kettering General Hospital between August 2019 and August 2020, and then UHL again between August 2020 and May 2023. Between December 2022 and May 2023, JD was "Acting Up" within the training programme at UHL. CCT was delayed due to JD working LTFT (0.8 full-time equivalent) from August 2020 and a period of shared parental leave between February and June 2021.

Retrospective review of NHS ePortfolio entries enabled quantification of self-entered forms, ticketed forms and progression or review forms. JD asked for verbal permission for all assessments from staff prior to the request being generated. As regards the patient survey, the secretarial team phoned the patients after their appointments to explain the request, ask for permission and obtain an email address. As assessments often involved aspects of diabetes and endocrinology and GIM, it was not possible to separate the assessments by speciality being assessed.

Results

Speciality / general medicine split

The final rota template that JD received in November 2021 was a 23-week rolling timetable. Over the 23 weeks, the total number of hours worked was 789, equating to 34-35 hours per week. Of these, 552 hours (70%) were speciality-specific compared with 237 hours (30%) for GIM work when working in a specialist teaching hospital. When adjustments are made for the amount of leave taken in the 23-week rolling timetable the speciality-specific hours worked fall to 354 hours since annual leave, study leave and bank holidays cannot be taken from GIM work. This equates to just below 60% speciality-specific time and 40% time for GIM. A greater amount of time was spent on GIM when working in a DGH and prior to October 2021, both where inpatient ward cover was greater.

Speciality clinic data

JD saw a total of 4,150 consultations in outpatient clinics between August 2017 and May 2023. The cumulative rate of consultations can be seen in Figure 1. There were 2,803 consultations in diabetes clinics (Tables 1 and 2) and 1,347

Figure 1. Cumulative numbers of diabetes and endocrine outpatient clinic consultations

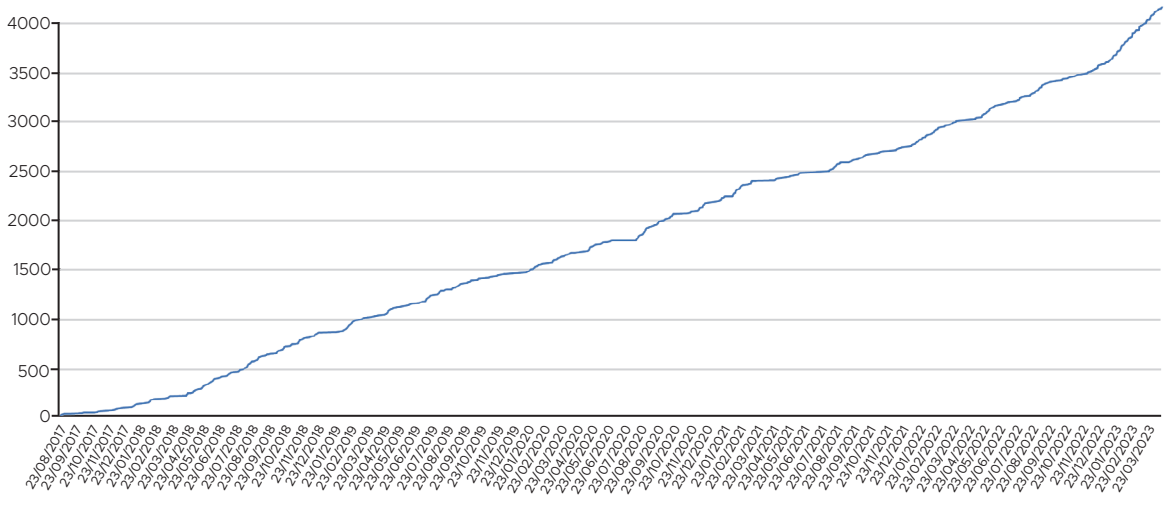


Table 1. JD diabetes clinic patient numbers

General	638
General - virtual	460
Foot	1,113
Young adult	60
Young adult - virtual	9
Antenatal	469
Antenatal - virtual	48
Other	6
Total	**2,803**

Table 2. Diagnosis of all patients seen in diabetes clinic

T1DM / LADA	785
T2DM	1,602
GDM	278
Pre-diabetes	9
Type 3C	9
No diabetes / other	111
Monogenic	3
Haemochromatosis	1
Obesity	4
Impaired glucose tolerance	1
Total	**2,803**

T1DM=type 1 diabetes mellitus; LADA=latent autoimmune diabetes of adults; GDM=gestational diabetes

Table 3. Number of patients seen in endocrine clinic

General endocrine	973
Late effects	17
Antenatal	59
Paediatric	31
Transgender	6
Joint surgical thyroid and parathyroid	41
Radioiodine	15
Adrenal	37
Menopause	17
Gynae-endocrine	81
Pituitary	29
Metabolic bone	25
Lipid	16
Total	**1,347**

consultations in endocrine clinics (Tables 3, 4 and 5). In all, 654 (15.7%) patients were seen during the "acting up" period (five months LTFT at 80%, which is equivalent to 15% of the total training time). A total 1,110 consultations were virtual, all after March 2020. Post March 2020 72% of endocrine consultations were held via the telephone compared with 30% of diabetes consultations (Table 6 and Figure 2).

Table 4. Endocrine system consultations

Thyroid	404
Pituitary	276
Gonad	204
Adrenal	162
Parathyroid	111
Lipid	27
Bone	16
Total	**1,347**

Table 5. The 20 most common endocrine diagnoses

Hyperthyroid	212
Prolactinoma / hyperprolactinaemia	104
Primary hypogonadism	85
Hypothyroid	82
Primary hyperparathyroidism	81
PCOS	71
Adrenal incidentaloma	49
Secondary hypogonadism	43
Addison's disease	30
(Pan)Hypopituitarism	25
Functionless pituitary adenoma	20
Early menopause	20
Cushing's	19
Steroid suppression of ACTH axis	18
Pituitary microadenoma	18
Acromegaly	17
AVP deficiency (cranial diabetes insipidus)	14
Phaeochromocytoma	12
Hypoparathyroidism	12
Subclinical hypothyroidism	12

PCOS=polycystic ovary syndrome

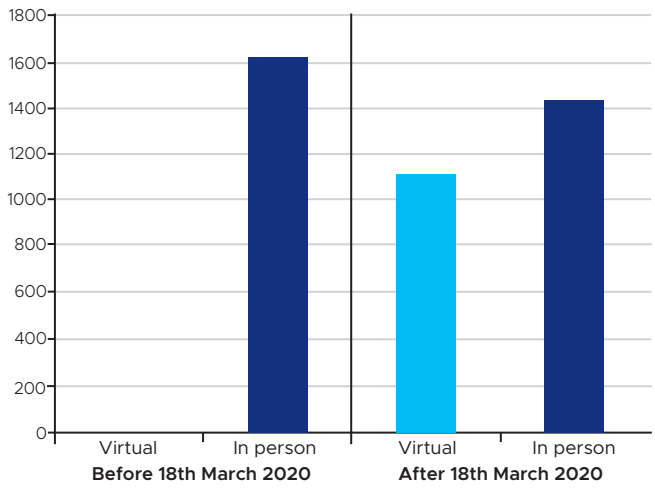
Diabetes had fewer different clinic types, with most consultations occurring in diabetic foot, general diabetes, young adult clinic or diabetes antenatal clinic (Table 1). There were a total of 1,113 consultations in foot clinic and 1,098 consultations in general diabetes clinic, of which 638 were in person and 460 were virtual. The general mix of patients included 1,602 people with type 2 diabetes mellitus (T2DM), 785 with type 1 diabetes mellitus (T1DM)/latent autoimmune diabetes in adults (LADA) and 278 with gestational diabetes (Table 2).

Of the 1,347 endocrine consultations, 973 were based in general endocrine clinics, 81 in gynae endocrine clinics and 59 in antenatal clinics (Table 3). The most common endocrine diagnoses included hyperthyroidism and hyperprolactinaemia. Table 5 shows the 20 most common endocrine diagnoses seen in clinic.

Table 6. Virtual vs. face-to-face clinics

Pre 18th March 2020		
Virtual	Diabetes	0
	Endocrine	0
In person	Diabetes	1,081
	Endocrine	529
Post 18th March 2020		
Virtual	Diabetes	517
	Endocrine	593
In person	Diabetes	1,205
	Endocrine	226

Figure 2. Virtual vs. face-to-face consultations



Training portfolio data

There were a total of 472 NHS ePortfolio entries during higher speciality training (Table 7). 158 of these were self-entered by JD, with most being reflective of his personal development plan. Thirty progression, summary or supervisor forms were completed during training. There were 284 ticketed assessment forms, of which multi-source feedback was the most completed and requested. An additional 130 requested assessment forms expired prior to completion (Table 8), giving a response rate of 68.6%. The highest response rates (that were not just single assessments) were directly observed procedures and teaching assessments (100%), and the lowest completion rate was for patient surveys (50%).

Table 8. NHS ePortfolio tickets expired and completed during speciality training

	Expired	Completed	Response rate (%)
ACAT	20	33	62.3
Audit assessments	0	1	100.0
CBD	27	64	70.3
DOPS	0	8	100.0
Mini-cex	5	21	80.8
MSF	47	102	68.5
MCR	9	24	72.7
Patient survey	20	22	52.4
OPCAT	1	1	50.0
QiP assessment form	1	1	50.0
Teaching observation	0	7	100.0
Total	**130**	**284**	**68.6**

Table 7. Summary of NHS ePortfolio entries (covers GIM and Diabetes and Endocrinology)

Self-entered		Ticketed Forms		Progression / Supervisor forms	
Reflection	126	ACAT	33	ARCP	8
Educational agreement	1	Audit assessments	1	ES report	5
Health and probity forms	5	CBD	64	PYA report	1
Self-MSF	2	DOPS	8	GIM supervisors report	3
PDP	20	Mini-cex	21	Induction appraisal form	6
Publication reflection	4	MSF	102	Mid-point review	1
		MCR	24	Summary MSF	5
		Patient survey form & summary	22	Patient survey summary	1
		OPCAT	1		
		QiP assessment form	1		
		Teaching observation	7		
Total	**158**	**Total**	**284**	**Total**	**30**
				GRAND TOTAL	**472**

MSF=multi-source feedback; PDP=personal development plan; ACAT=acute care assessment tool; CBD=case-based discussions; DOPS=directly observed procedures; MCR=multi-consultant report; OPCAT=outpatient care assessment tool; QjP=quality improvement project; ARCP=annual review of competence progression; ES=educational supervisor; PYA=penultimate year assessment; GIM=general internal medicine

Discussion

To our knowledge, this is the first comprehensive analysis of all outpatient training activities of a UK NHS specialist trainee in diabetes and endocrinology. This database shows the broad range and depth that diabetes and endocrinology training can offer and gives a useful insight into how training and clinics can be arranged within the context of current changes. This includes a shortening of the training period and the post-COVID 19 NHS operational environment.

Prior to the COVID-19 pandemic, no patients had been seen virtually. The COVID-19 pandemic led to a greater number of virtual patients, which represents a significant change to clinical practice. The larger emphasis on virtual consultations in endocrinology suggests that more care can be delivered remotely in this specialty compared to diabetes, particularly in the case of antenatal and foot clinics. This shift in outpatient management needs to be matched during training, including the use of simulation sessions for telephone consultations. There is a need for consideration of how to deliver these virtual consultations and provide appropriate clinical supervision and workplace-based assessments, including observed patient consultations.

More patients were seen in diabetic foot clinic (n=1,113) compared to any other diabetes clinic. Whilst diabetic foot care makes up an important part of the curriculum, the number of patients seen is out of proportion to the curriculum weighting. This high number is likely to be reflective of a need for service delivery, and increasing the number of consultants in foot clinic may reduce the reliance on speciality trainees. With the expansion of technology in diabetes, greater training time should be given to pump and complex diabetes clinics. This could be achieved through more dedicated teaching clinics in these areas. Diabetes and endocrine training will change with introduction of the new curriculum from a five-year to a four-year period.[2] Based upon the numbers presented in this article, it can be expected that trainees will see approximately 800 fewer patients as specialist diabetes and endocrinology trainees than they would have seen previously. The IMT3 year may still offer the chance to gain experience in diabetes and endocrine clinics and other GIM clinics, and may provide broader training relevant to diabetes and endocrinology.

It is notable that early on in JD's training, there were smaller numbers of consultations per week. There are two reasons for this. First, clinics were underbooked in order to allow sufficient time for less experience and the need for greater supervision. Secondly, there was a greater emphasis on inpatient experience. This practice is likely to be widespread amongst all higher specialist trainees. How speciality trainees are utilised will impact upon their training experience. Having more time for outpatient consultations at earlier training stages helps to support adequate supervision and development. Greater inpatient activity detracts from gaining specialist outpatient experience. The advent of the IMT3 year may support inpatient care and allow speciality trainees more outpatient clinic training time.

It is also noticeable that not all of the patients seen in clinic had a primary diabetes or endocrine diagnosis. Close to 10% of patients seen in Diabetic Foot Clinic did not have diabetes. This shows how the diabetic foot clinic has fulfilled a role in the management of foot disease outside of diabetes and how a foot clinic can offer training in complications of other conditions, particularly non-diabetic causes of neuropathy (including alcoholic and inherited peripheral neuropathies) and peripheral vascular disease-related foot ulcers.

The large number of NHS ePortfolio entries helped to quantify the expected evidence that a trainee may be expected to provide for CCT. Overall, 472 entries equated to around eight entries per month (full time equivalent). It is questionable whether such a large number of written reflections (126) and MSF (102) add value to training, particularly if concerns have not been identified, and the same information could probably be ascertained from considerably fewer entries. The 100% response rate for teaching observations may suggest that the assessor feels a greater involvement as this task was not part of routine clinical work. The lower response rate for case-based discussions and the acute care assessment tool may reflect time pressures of the consultants predominantly, completing it alongside clinical work. Teaching clinics may help to provide protected time for assessments to be undertaken. Additionally, the data suggest that for trainees completing a patient survey approximately double the number of requests will need to be generated than the minimum number required for the survey to be valid.

Limitations

It is important to note that there are some factors specific to training in UHL and East Midlands (South) that may affect the generalisability of data to trainees nationally. There has been no in-patient or speciality ward in UHL since November 2021 , which led to an increase in the proportion of working time specific to the speciality. Here we demonstrated 60% of the working hours in diabetes and endocrinology. As most training sites have inpatient general ward cover the training time in the speciality is likely to be less in other areas so these data cannot be extrapolated for all trainees. As a dual speciality training programme, it might be considered that too much time is dedicated to diabetes and endocrine training and that more time should be spent on GIM, with a 50:50 split overall. When placement time in a DGH is also taken into account the amount of time in GIM is likely to be greater than speciality-specific time. As the year JD spent in a DGH was during the initial phase of the Covid pandemic (Aug 2019 – Aug 2020) the data for GIM/speciality time were not collected and would likely not provide an accurate reflection of training. The new curriculum includes a greater emphasis on GIM to match the requirements for service provision. As a result, the training split may become more equally balanced, which would proportionally reduce the number of clinics and cases seen in diabetes and endocrinology and consequently have an impact on speciality training.

JD spent the equivalent of four years training in a large teaching hospital and one year in a DGH. Most diabetes and endocrine training programmes include at least two years in a DGH and less time in large teaching hospitals, meaning that JD's

experience may not reflect that of all trainees nationally. Leicester has the highest prevalence of T2DM in the East Midlands,[3] which may explain why more patients with T2DM were seen than in other parts of the country. This is important as in some regions, where secondary and tertiary care services deal with more T1DM and technology, trainees will not be exposed to the routine care of people with T2DM unless there are community services built into the training rota. JD had a job plan whilst an "acting up" consultant which was similar to the job plan of the post he was applying for and reflected his interests and the clinical needs of the department. The job plan involved predominantly diabetes, with a focus on diabetic foot and antenatal care. Trainees who do not "act up" or who "act up" predominantly in endocrinology may have a different case mix during this time. "Acting up" close to the end of training enables a large number of diabetes and endocrine patients to be seen whilst working as a consultant prior to taking up a substantive consultant post.

For logistical reasons, the present dataset does not document inpatient consultations (including speciality referrals) or telephone advice given outside clinic settings. This means that a significant amount of speciality training that occurs with inpatients and giving specialist advice has not been captured. Inpatient reviews and general practice advice sessions offer valuable learning opportunities.

The number of patients seen does not necessarily correlate with time spent because greater numbers of patients were seen in foot clinics compared to general endocrine clinics. There was also some inconsistent coding in the database: for example, some patients with hypogonadism were coded as either primary, secondary or hypogonadism, therefore limiting some of the subanalysis that could be done. Despite these limitations, the comprehensive nature of the dataset and the focus on outpatient activity allows us to draw meaningful conclusions and to provide informed recommendations for the future.

Conclusions

Balancing service provision and training remains a challenge within the NHS, particularly in the current context of increasing service pressures.[4] Whilst all areas of diabetes and endocrinology offer training value, the large number of patients seen in the diabetic foot clinic probably represents service provision rather than training. Specialist training could be optimised by sacrificing some diabetes and endocrine service provision for specialist clinics (e.g. fewer diabetic foot clinics to cover more specialist diabetes clinics such as pump technology and obesity management). The recent reduction in training opportunities could be addressed through having more protected time for speciality training. This needs to be balanced with the change in curriculum, with a greater emphasis on GIM and need for equal split of training. It also enables a retrospective analysis of what type of ePortfolio entries may add value to the training. The data can provide a point of reference for future analysis on the effect of four years' speciality specific training on breadth of training.

Key messages

- Diabetes and endocrine specialist registrar training provides a broad mix of outpatients experience with over 4,000 outpatient consultations by a single trainee
- The introduction of IMT3 year will lead to approximately 800 fewer consultations as a registrar in diabetes and endocrinology
- Specialist training could be optimised by less time in clinics more around service provision (e.g. diabetic foot clinic) and more time in specialist diabetes clinics
- A total of 472 NHS ePortfolio entries were noted in the training time, including 284 ticketed forms with a response rate of 68.4%

We also hope this paper informs the discussions around training programmes and stimulates other regions and trainees to look into their rota and clinics and patient mix and think about the balance of training time in GIM versus speciality.

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References

1. Beamish AJ, Johnston MJ, Harries RL, *et al*; Council of the Association of Surgeons in Training. Use of the eLogbook in surgical training in the United Kingdom: a nationwide survey and consensus recommendations from the Association of Surgeons in Training. *Int J Surg* 2020;**84**:199-206. https://doi.org/ 10.1016/j.ijsu.2020.02.045. Epub 2020 Mar 10. PMID: 32169575.
2. Ali A. The continued evolution of education and training – the new curriculum in endocrinology and diabetes. Society for Endocrinology. Online. Available from UHL: https://www.endocrinology.org/endocrinologist/141-autumn-2021/features/the-continued-evolution-of-education-and-training-the-new-curriculum-in-endocrinology-and-diabetes/ Accessed 28th September 2023
3. Call for thousands at risk of type 2 diabetes in East Midlands to act now. 19th May 2022 [accessed 20th September 2023]. Available from URL https://www.england.nhs.uk/midlands/2022/05/19/call-for-thousands-at-risk-of-type-2-diabetes-in-east-midlands-to-act-now/#:~:text=In%20the%20East%20Midlands%2C%20the,it%20is%20expected%20to%20rise.
4. Sholl S, Ajjawi R, Allbutt H, *et al*. Balancing health care education and patient care in the UK workplace: a realist synthesis. *Med Educ* 2017;**51**:787-801. https://doi.org/10.1111/medu.13290.