Balancing the concentration of services required for professional training requirements with demand and needs for local services: a policy analysis

Appendices

Report for the National Co-ordinating Centre for NHS Service Delivery and Organisation R&D (NCCSDO)

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Appendix 1 Literature search strategy

The literature search was carried out by the Centre for Reviews and Dissemination at the University of York. Table A1.1 lists the databases that were searched.

Table A1.1 Databases searched

Database	Service / host	Search date / search dates
Medline	Ovid on the web	1996–week 3, August 2002
EMBASE	Ovid on the web	1996–week 3, August 2002
Dissertation Abstracts	Dialog	1996–29 August 2002
ASSIA	Datastar	1996–29 August 2002
NTIS	Dialog	1996–29 August 2002
Geobase	Dialog	1996–29 August 2002
HMIC	ARC service	1996–29 August 2002
Magazine Index	Dialog	1996–30 August 2002
Management Contents	Dialog	1996–29 August 2002
Pais	Dialog	1996–29 August 2002
Sigle	CD-ROM	29 August 2002
Sociological Abstracts	ARC service	1996–29 August 2002
Social SciSearch	Dialog	1996–29 August 2002

The search strategies are presented below.

Medline

1 centrali#ation.tw.
2 centrali#ed.tw.
3 decentrali#ation.tw.
4 demography.tw.
5 decentrali#ed.tw.
6 distance$.tw.
7 geographic.tw.
8 (gravity adj model).tw.
9 health facility closure/
10 health facility merger/
11 regional health planning/

12 regionali#ation.tw.
13 speciali#ation.tw.
14 exp catchment area health/
15 exp centralized hospital services/
16 (hospital adj closure$).tw.
17 or/1–16
18 exp health services accessibility/
19 exp hospitalization/
20 exp hospitals/
21 (access$ adj3 service).tw.
22 (access$ adj3 services).tw.
23 (access$ adj3 hospital).tw.
24 (access$ adj3 hospitals).tw.
25 or/18–24
26 (treatment adj uptake).tw.
27 exp choice behavior/
28 exp patient acceptance of healthcare/
29 patient dropouts/
30 small area analysis/
31 or/26–30
32 exp asia central/or exp asia southeastern/
33 china/or korea/or macao/or mongolia/or taiwan/or bangladesh/or bhutan/or india/or nepal/
34 pakistan/or sri lanka/or south america/or exp africa central/
35 exp south america/
36 exp africa eastern/or exp africa northern/or exp africa western/
37 namibia/
38 or/32-37
39 psychiatric.tw.
40 exp mental disorders/
41 or/38-40
42 17 and (25 or 31)
43 42 not 41

EMBASE

1 (centrali#ation or centrali#ed or decentrali#ation or decentrali#ed).ti,ab.
2 demography.ti,ab.
3 DEMOGRAPHY/
4 geography/
5 (distance$ or geographic).ti,ab.

6 gravity model.ti,ab.
7 (distance$ or geographic).ti,ab.
8 (gravity adj model$).ti,ab.
9 health facility closure/
10 regional health planning/
11 (regionali#ation or speciali#ation).ti,ab.
12 urbanization/or urban population/
13 urban population/or regionalization/
14 exp catchment area health/
15 POPULATION/or exp "POPULATION AND POPULATION RELATED PHENOMENA"/

The following databases were searched on the Dialog system using the strategy below:

Management Contents, Magazine Index, Dissertation Abstracts, NTIS, Pais

1 CENTRALI?ATION OR DECENTRALI?ATION OR CENTRALI?ED OR DECENTRALI?ED
2 DEMOGRAPHY OR GEOGRAPHY OR GEOGRAPHIC OR DISTANCE?
3 GRAVITY(W)MODEL?
4 (HEALTH OR HOSPITAL? ?)(3N)CLOSURE
5 REGIONAL()HEALTH()PLANNING
6 REGIONALI?ATION OR SPECIALI?ATION OR URBANI?ATION
7 URBAN(W)POPULATION
8 HEALTH(W)CARE(2N)ORGANI?ATION
9 S1:S8
10 (HEALTH OR HEALTHCARE)(3N)(ACCESS OR ACCESSING OR ACCESSIBILITY)
11 HOSPITAL(W)BED(W)(CAPACITY OR CAPACITIES)
12 HOSPITALI?ATION
13 HEALTH(W)CARE(W)AVAILABILITY
14 HEALTHCARE(W)AVAILABILITY
15 (HOSPITAL OR HOSPITALS OR MEDICAL)(3N)(ACCESS OR ACCESSING OR ACCESSIBILITY)
16 S10:S15
17 TREATMENT(W)UPTAKE
18 DROPOUT? ? OR DROP(W)OUT?
19 CHOICE OR CHOOSE OR CHOOSING
20 POPULATION(W)DYNAMIC?
21 PATIENT (3N)(COMPLIANCE OR ACCEPTANCE OR SATISFACTION)
22 SMALL(W)AREA(W)(ANALYSIS OR ANALYSES)
23 POPULATION(W)DENSITY
24 POPULATION(W)STRUCTURE

25 PATIENT(3N)ATTITUDE?
26 TREATMENT(W)FAILURE?
27 TREATMENT(W)OUTCOME?
28 S9 AND S16 AND S29
29 (HOSPITAL OR HOSPITALS) (3N)(UTILI?E OR UTILI?ATION OR USE)
30 S16
31 S16 OR S29
32 S17:S27
33 S9 AND S31 AND S32
34 UD=1996:9999
35 S33 AND S34

Geobase

1 (CENTRALI? OR DECENTRALI?)/TI,AB
2 (DEMOGRAPHY OR GEOGRAPH?)/TI,AB
3 DISTANCE?/TI,AB
4 GRAVITY()MODEL?/TI,AB
5 CLOSURE?/TI,AB
6 (REGIONALI?ATION OR SPECIALI?ATION)/TI,AB
7 (URBANI?ATION OR URBAN()POPULATION)/TI,AB
8 CATCHMENT()AREA?/TI,AB
9 SPATIAL ASPECT/DE
10 URBAN HEALTHCARE/DE
11 HEALTHCARE PLANNING/DE
12 MEDICAL GEOGRAPHY/DE
13 SPATIAL PATTERN/DE
14 LOCATIONAL BEHAVIOR/DE
15 DISTANCE-DECAY PATTERN/DE
16 HEALTH SERVICES LOCATION/DE
17 SPATIAL ANALYSIS/DE
18 DISTANCE EFFECT/DE
19 SPATIAL DISTRIBUTION/DE
20 CATCHMENT AREA/DE
21 RESIDENCE LOCATION/DE
22 TRAVEL-TIME COST/DE
23 HEALTH SYSTEM DECENTRALISATION/DE
24 DECENTRALISATION/DE
25 S1:S24
26 HEALTH()SERVICE?
27 HOSPITAL? OR HEALTHCARE OR HEALTH()CARE OR PATIENT?

28 MEDICAL OR SURGICAL
29 S26:S28
30 S25 AND S29
31 ACCESS? OR AVAILABILITY
32 HEALTHCARE PLANNING/DE
33 HEALTH CARE ACCESS/DE
34 MEDICAL PROVISION/DE
35 HEALTH SERVICE UTILISATION/DE
36 BED CLOSURE/DE
37 HEALTH SERVICES LOCATION/DE
38 HEALTH CARE DEMAND/DE
39 TRANSPORTATION/DE
40 HOSPITAL ACCESSIBILITY/DE
41 S31:S40
42 S30 AND S41
43 DEVELOPING WORLD/DE
44 S42 NOT S43
45 UD>1995
46 S44 AND S45

Social SciSearch

1 CENTRALI?ATION OR DECENTRALI?ATION OR CENTRALI?ED OR DECENTRALI?ED
2 DEMOGRAPHY OR GEOGRAPHY OR GEOGRAPHIC OR DISTANCE?
3 GRAVITY(W)MODEL?
4 (HEALTH OR HOSPITAL? ?)(3N)CLOSURE
5 REGIONAL()HEALTH()PLANNING
6 REGIONALI?ATION OR SPECIALI?ATION OR URBANI?ATION
7 URBAN(W)POPULATION
8 HEALTH(W)CARE(2N)ORGANI?ATION
9 S1:S8
10 (HEALTH OR HEALTHCARE)(3N)(ACCESS OR ACCESSING OR ACCESSIBILITY)
11 HOSPITAL(W)BED(W)(CAPACITY OR CAPACITIES)
12 HOSPITALI?ATION
13 HEALTH(W)CARE(W)AVAILABILITY
14 HEALTHCARE(W)AVAILABILITY
15 (HOSPITAL OR HOSPITALS OR MEDICAL)(3N)(ACCESS OR ACCESSING OR ACCESSIBILITY)
16 S10:S15
17 TREATMENT(W)UPTAKE
18 DROPOUT? ? OR DROP(W)OUT?

19 CHOICE OR CHOOSE OR CHOOSING
20 POPULATION(W)DYNAMIC? ?
21 PATIENT (3N)(COMPLIANCE OR ACCEPTANCE OR SATISFACTION)
22 SMALL(W)AREA(W)(ANALYSIS OR ANALYSES)
23 POPULATION(W)DENSITY
24 POPULATION(W)STRUCTURE
25 PATIENT(3N)ATTITUDE? ?
26 TREATMENT(W)FAILURE? ?
27 TREATMENT(W)OUTCOME? ?
28 PSYCHIATRIC OR MENTAL(W)DISORDER? ? OR MENTAL(W)ILLNESS?
29 UD=1996:9999
30 S17:S27
31 S9 AND S16 AND S30
32 S31 NOT S28
33 S32 AND S29

ASSIA

1 CENTRALI$ OR DECENTRALI$
2 DEMOGRAPHY OR GEOGRAPHY OR GEOGRAPHIC OR DISTANCE$
3 GRAVITY ADJ MODEL$
4 (HEALTH OR HOSPITAL$) WITH CLOSURE
5 REGIONAL ADJ HEALTH ADJ PLANNING
6 REGIONALI$ OR SPECIALI$ OR URBANI$
7 URBAN ADJ POPULATION
8 HEALTH ADJ CARE ADJ ORGANI?
9 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8
10 (HEALTH OR HEALTHCARE) WITH (ACCESS OR ACCESSING OR ACCESSIBILITY)
11 HOSPITAL ADJ BED WITH (CAPACITY OR CAPACITIES)
12 HOSPITALI$
13 HEALTH ADJ CARE WITH AVAILABILITY
14 HEALTHCARE WITH AVAILABILITY
15 (HOSPITAL OR HOSPITALS OR MEDICAL) WITH (ACCESS OR ACCESSING OR ACCESSIBILITY)
16 10 OR 11 OR 12 OR 13 OR 14 OR 15
17 TREATMENT ADJ UPTAKE
18 DROPOUT$ OR DROP ADJ OUT$
19 CHOICE OR CHOOSE OR CHOOSING
20 POPULATION ADJ DYNAMIC$
21 PATIENT WITH (COMPLIANCE OR ACCEPTANCE OR SATISFACTION)
22 SMALL ADJ AREA ADJ (ANALYSIS OR ANALYSES)

23 POPULATION ADJ DENSITY
24 POPULATION ADJ STRUCTURE
25 PATIENT WITH ATTITUDE$
26 TREATMENT ADJ FAILURE$
27 TREATMENT ADJ OUTCOME$
28 PSYCHIATRIC OR MENTAL ADJ DISORDER$ OR MENTAL ADJ ILLNESS$
30 17 18 19 20 21 22 23 24 25 26 27
31 9 AND 16 AND 30
32 31 NOT 28

SIGLE

Centralisation or centralization or decentrali*

Demograph* or geograph* or distance*

Merger* or closure* or catchment

1 or 2 or 3

access* or availability or transport

hospital or medical or health

4 and 5 and 6

HMIC and Sociological Abstracts

1 CENTRALI* OR DECENTRALI*
2 DEMOGRAPHY OR GEOGRAPHY OR GEOGRAPHIC OR DISTANCE*
3 GRAVITY MODEL*
4 (HEALTH OR HOSPITAL*) WITH CLOSURE
5 REGIONAL HEALTH PLANNING
6 REGIONALI* OR SPECIALI* OR URBANI*
7 URBAN POPULATION
8 HEALTH CARE ORGANI*
9 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8
10 (HEALTH OR HEALTHCARE) WITH (ACCESS OR ACCESSING OR ACCESSIBILITY)
11 HOSPITAL WITH BED WITH (CAPACITY OR CAPACITIES)
12 HOSPITALI*
13 HEALTH CARE WITH AVAILABILITY
14 HEALTHCARE WITH AVAILABILITY
15 (HOSPITAL OR HOSPITALS OR MEDICAL) WITH (ACCESS OR ACCESSING OR ACCESSIBILITY)
16 #10 OR #11 OR #12 OR #13 OR #14 OR #15
17 TREATMENT UPTAKE
18 DROPOUT* OR DROP OUT*
19 CHOICE OR CHOOSE OR CHOOSING

20 POPULATION DYNAMIC*

21 PATIENT WITH (COMPLIANCE OR ACCEPTANCE OR SATISFACTION)

22 SMALL AREA ANALYSIS OR SMALL AREA ANALYSES

23 POPULATION DENSITY

24 POPULATION STRUCTURE

25 PATIENT WITH ATTITUDE*

26 TREATMENT FAILURE*

27 TREATMENT OUTCOME*

28 PSYCHIATRIC OR MENTAL DISORDER* OR MENTAL ILLNESS*

30 #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27

31 #9 AND #16 AND #30

32 #31 NOT #28

Appendix 2 Inter-specialty variations in staffing patterns: two case studies

As explained in Section 3, national workforce data relate to trusts not hospitals. In order to obtain data on staffing by hospital or site, it is necessary to use information collected by the Royal Colleges by specialty. However, it is not possible to pool this data to examine the extent of variation by specialty within a single hospital. We therefore undertook two case studies of single-site trusts to investigate the extent to which dependence on trainees to deliver service was primarily a specialty-level problem that ranged from low to high within an individual hospital. Data at this level of detail also enabled us to examine how coping with the European Working Time Directive (EWTD) varied by specialty and staffing pattern. Again, the problems were between specialties within a trust and were not a trust-specific issue.

The case studies are for two medium sized non-teaching district general hospitals (DGHs). We reviewed staffing for the major acute specialties. Details by hospital and by specialty are provided below. However, a brief summary brings out the far greater difference between specialties than between trusts.

- *Obstetrics and gynaecology* The two hospitals had similar caseloads and similar staffing arrangements for consultants and middle-grade doctors. However, expansion of the senior house officer (SHO) tier in DGH B (from four SHOs) would appear to be necessary to meet EWTD requirements.
- *Paediatrics* Although the two paediatric units had similar-sized caseloads, the junior staffing levels were far higher in DGH A. The hospital's 'level-2' neonatal unit was sited within the maternity unit, the unit being in a building that was separate from the main hospital where the paediatric wards were sited. To provide safe and immediate cover across all emergency services, DGH A therefore had two SHO rotas. DGH B also had a level-2 neonatal unit, but as it was in close proximity to the paediatric wards, a single SHO out-of-hours rota was sufficient. Both hospitals were reliant on staff doctors to complete their middle-grade cover.
- *General medicine and care of the elderly* These two specialties are considered jointly because it is usual practice in district hospitals nowadays for out-of-hours care to be provided by rotas that cover all medical inpatients. In DGH A, 12 consultant physicians joined the senior rota; there were 16 consultants, including part-time members, on the rota in DGH B. In each hospital the consultants were supported by three training rotas: a middle-grade rota (specialist registrars (SpRs) in both hospitals), an SHO-grade rota (the staff including trust doctors in both hospitals) and a pre-registration house officer (PRHO) rota.
- *General surgery and urology* The patterns of staffing for these two surgical specialties in the DGHs were similar: each had six consultant general surgeons who formed the consultant rota, and each had two or three consultant urologists who separately covered urological emergencies. Both hospitals were dependent upon non-training-grade doctors (staff or associate specialist) to complete the middle-grade tier and, likewise, trust doctors were needed to complete the SHO tier. PRHOs formed the most junior rota.

- *Trauma and orthopaedics* The London hospital (DGH A) had a larger consultant establishment (nine compared with six in DGH B), but the middle-grade and SHO staffing levels in both hospitals were similar, forming one in six rotas in every case and with non-training-grade doctors as members.
- *Accident and emergency (A&E)* This specialty, historically, has had low consultant staffing levels, so the DGHs were not unusual in each having only two A&E consultants and one or no SpR. As the departments were open for 24 hours a day throughout the year, they had long-established shift systems for SHO-equivalent doctors. DGH A, in fact, had a double shift arrangement with the middle-grade shift being staffed primarily by staff doctors.
- *Anaesthetics* Since the skills of anaesthetists are required in many clinical departments in addition to various surgical theatre suites (for example, the labour ward, critical-care unit, pain-relief service), district hospitals now have relatively large departments of anaesthetics. Fifteen consultants formed the senior rota in DGH B, and 12 consultants in DGH A. Each hospital had four SpRs. At the SHO level, DGH B had 11 trainees, and DGH A had eight (inclusive of trust doctors). But in this specialty doctors entering the SHO grade must spend their first 6 months acquiring requisite competencies before they can go on call or work under distant supervision.

The case studies were prepared as the two trusts were reviewing medical staffing arrangements in all specialties in readiness for the implementation of EWTD on 1 August 2005, so the configurations for the middle-grade and SHO tiers illustrated in this appendix may since have been modified to a certain extent. Nevertheless, the distinctive inter-specialty patterns will still be evident.

Case study A Staffing levels in a medium-sized hospital in June 2003

1 Obstetrics and gynaecology (8265 finished consultant episodes (FCEs))

6 Consultants

3 Staff grades

6 SpRs

1 Flexible registrar (i.e. part-time registrar)

1 Senior SHO

6 SHOs (of which 1 was on the GP Vocational Training Scheme (GPVTS))

1 Flexible SHO (part-time)

Levels of cover for out-of-hours work

Level 1 Consultant cover 1:6

Level 2 SpRs+FlexiSpR+Senior SHO+Staff grades: full shift

Level 3 SHOs+FlexiSHO+GPVTS: rolling 1:6 rota, full shift

Contractual arrangements

Level 1 Consultants on call from home approx 1:6 (with prospective cover).

Level 2 SpRs on full shift. This means a maximum of 56 hours of work/week, where each shift cannot be longer than 14 hours, and there must be at least an 8-hour break between shifts. Natural breaks are required during the shift of at least 30 minutes every 4 hours. Band supplement level, 2a.

Level 3 SHOs work a full shift pattern. Band supplement level, 2a.

2 Paediatrics (4467 FCEs)

5 Consultants+1 part-time

3 Staff grades

4 SpRs

10 SHOs (5 for paediatric unit, 5 for neonatal unit), of which 2 are GPVTS trainees

1 House officer

Levels of cover for out-of-hours work

Level 1 Consultant cover 1:5+prospective cover

Level 2 SpRs+Staff grades+Flexi 16-hour partial shift

Level 3 SHOs for neonatal unit, SHOs+Flexi+GPVTS full shift; SHOs for general paediatrics, SHOs+Flexi+GPVTS full shift

Level 4 1 House officer (supernumerary)

Contractual arrangements

SHOs There are two units in the DGH: general paediatrics/A&E and the neonatal unit. The neonatal unit is a level-2 unit. There are 10 SHOs, split equally between each site. The SHOs work a full-shift pattern on each site, with five doctors working each shift pattern. Band, 2a.

The SpRs are training years 1 and 2. The SpRs cover both general paediatrics and the neonatal unit. Owing to difficulties in recruiting middle grades, they were on a 24-hour on-call rota, and not New Deal. Band supplement, 3.

The House Officer post is supernumerary. He or she does on call.

3 A&E

2 Consultants

8 Staff grades

1 SpR

10 SHOs

Levels of cover for out-of-hours work

Consultants 1:2 rota

SpR+Staff grades full shift

SHOs full shift

Contractual arrangements

Middle-grade staff on a full shift with nine doctors. Band supplement, 1a.

SHOs on a full shift with 10 doctors. Band supplement, 1a.

4 Anaesthetics

12 Consultants+1 locum consultant

1 Associate specialist

3 Staff grades

4 SpRs

5 SHOs

1 PRHO

Critical care: 1 SHO, 2 trust doctors

Levels of cover for out-of-hours work

Level 1 Consultants, 1:12 with prospective cover

Level 2 Staff grades+SpRs, 16-hour partial shift, 1:5 weekdays, 1:4 weekends

Level 3 SHOs, 16-hour partial shift, 1:5

Contractual arrangements

Level 1 Consultants on call, 1:12.

Level 2 Staff grades and SpRs on 16-hour partial shift. Band supplement, 2a.

Level 3 SHOs on 16-hour partial shift. First 3 months on the job they shadow the consultant. They rotate through critical care post also, and one SHO in critical care comes from medicine. Band supplement, 2a.

Level 4 PRHO supernumary: observes and helps.

5 General medicine (6205 FCEs)

13 Consultants (2 cardiology, 2 gastroenterology, 1 renal, 2 respiratory, 2 endocrine, 4 care of the elderly)

2 Locum consultants

7 SpRs+2 trust doctors

10 SHOs

7 PRHOs

Levels of cover for out-of-hours work: combined rota for general medicine and care of the elderly

Level 1 Consultant cover, 1:13 with prospective cover

Level 2 SpRs on 24-hour partial shift

Level 3 SHOs on full shift

Level 4 PRHOs on full shift

Contractual arrangements

- Consultants: the renal consultant does not take part in the rota.
- All training-grade doctors do a rota with the care of the elderly trainees.
- SpRs are on a 1:9, 24-hour partial shift. Band supplement, 2b.
- SHOs on a 1:21 full shift. Band supplement, 2a.
- PRHOs are on full shift. Band supplement, 2a.

6 Care of the elderly (1809 FCEs)

4 Consultants

1 Associate specialist

2 SpRs

10 SHOs

2 PRHOs

The care of the elderly trainees combine with the general medicine trainees to provide out-of-hours care: see above.

7 Psychiatry

9 Consultants

3 Locum consultants

5 Staff grades

1 SpR

8 SHOs

Levels of cover for out-of-hours work

Consultants+locums+spr, 1:10 with prospective cover

SHOs, on call 1:8

Contractual arrangements

There are two levels of cover: Consultants and SpRs, and SHOs. The SHO band supplement is 2b.

8 General surgery and urology (6409 FCEs)

General surgery

6 Consultants

1 Locum consultant

2 Staff grades

1 Associate specialist

2 SpRs

1 Hospital specialist

3 SHOs

3 Trust doctors

5 PRHOs

Urology

2 Consultants

1 Staff grade

1 SpR

1 Trust officer

2 PRHO

Levels of cover for out-of-hours work in general surgery

Consultants 1:6

Staff grades+SpRs 1:6

SHOs+trust officers 1:7, 16-hour partial shift

PRHOs full shift

Contractual arrangements

General surgery

SpRs with staff doctors worked an on-call rota of 1:6, covering urology overnight. Band supplement, 3.

SHOs The general surgery SHOs covered urology overnight on a 16-hour partial shift. Band supplement, 2b.

PRHOs Full shift. Band supplement, 3.

Urology

The urology consultants had a 1:2 separate rota; the urology staff grade did no on call, and the urology SpR and trust doctor provided daytime cover and 1:7 evening on call with general surgical trainees.

The staff work across two sites.

9 Orthopaedics / trauma (3411 FCEs)

6 Consultants

2 Staff grade

3 SpRs

3 Trust specialists

5 SHOs

3 Trust officers

Levels of cover for out-of-hours work

Consultants	1:6
SpRs+trust specialists	1:6, 24-hour on call
SHOs+trust doctors	1:6, 16-our partial shift

Contractual arrangements

SpRs	24-hour on call on a 1:6 rota. Band supplement, 2a.
SHOs	16-hour partial shift. Band supplement, 2b.

The SHOs and SpRs operate a trauma week on a rolling 1:7 programme. They also work across two sites, although the second site does not accept trauma.

Case study B Staffing levels in a medium-sized hospital in September 2003

1 Obstetrics and gynaecology (8200 FCEs)

The current medical staffing structure is:

6 Consultants

1 Staff grade

6 SpRs

4 SHOs (of which 1 is on the GPVTS)

Levels of cover for out-of-hours work

Level 1	Consultant cover 1:6
Level 2	SpRs: full Shift
Level 3	SHOs: on call

Contractual arrangements

Level 1	Consultants on call from home approx 1:6 (with prospective cover)

Level 2 SpRs: full shift

Level 3 SHOs: on call (a full shift pattern of working was ready to be implemented)

2 Paediatrics (4720 FCEs)

4 Consultants+2 part-time (equating to 1 whole-time equivalent (wte))

1 Staff grade

4 SpRs (2 full time, 3 flexible trainees)

5 SHOs (working across both units), of which 2 are GPVTS trainees

1 House officer

Levels of cover for out-of-hours work

Level 1 Consultant cover 1:5 with prospective cover

Level 2 SpRs+staff grades: 24-hour partial shift

Level 3 SHOs+Flexi+GPVTS: 24-hour partial shift

Level 4 1 House officer (supernumerary)

Contractual arrangements

There were two units in the DGH: general paediatrics/A&E, and the neonatal unit. The neonatal unit is a level 2 unit.

- The five SHOs worked a 24-hour partial shift across both units.
- The four SpRs were mixed across all training years. They covered both general paediatrics and the neonatal unit and worked a 24-hour partial shift.
- The house officer post was supernumerary. The doctor did a partial shift.

3 A&E

2 Consultants

3 Staff grades

5 SHOs+3 trust doctors (not training posts)

Levels of cover for out-of-hours work

Consultants 1:2 rota

Staff Grades ???????????

SHOs +Trust doctors Full shift

4 Anaesthetics

15 Consultants+3 locum consultants

1 Associate specialist

4 SpRs (including 1 flexible trainee)

10 SHOs+1 trust doctor

1 PRHO

Note: all staff work across both general and critical care.

Levels of cover for out-of-hours work

Level 1 Consultants 1:15 with prospective cover

Level 2 SpRs, SHOs and trust doctor: 24-hour partial shift, 1:5 weekdays, 1:4 weekends

Level 3 SpR and SHOs: full shift

Contractual arrangements

Level 1 Consultants on call 1:15.

Level 2 SpRs and SHOs on a 24-hour partial shift. During the first 3 months in post, SpRs and SHOs shadow the consultant.

Level 3 SpR and SHOs are on a full shift and rotate through critical care. One SHO in critical care comes from medicine.

Level 4 PRHO supernumary, who observes and helps.

5 General medicine (5387 FCEs)

18 Consultants (including 3 part-time; 1 cardiology, 2 gastroenterology, 2 renal, 3 respiratory, 2 endocrine, 5 care of the elderly)

1 Locum consultant

6 SpRs+1 clinical fellow+1 flexible trainee

10 SHOs+4 trust Doctors (includes those working for care of the elderly consultants)

10 PRHOs (includes those working for care of the elderly consultants)

Levels of cover for out-of-hours work: combined rota for general medicine and care of elderly

Level 1 Consultant cover: 1:16 with prospective cover

Level 2 SpRs: 24-hour partial shift

Level 3 SHOs: full shift

Level 4 PRHOs: full shift

Contractual arrangements

The renal consultant did not take part in the rota. General medical staff at all levels were were on combined rotas with the care of the elderly staff.

Consultants 1:16

SpRs 1:9, 24-hour partial shift

SHOs 1:21, full shift

PRHOs 1:10, full shift

6 Care of the elderly (4518 FCEs)

4 Consultants

1 Associate specialist

2 SpRs

10 SHOs (joint with general medicine – see above)

2 PRHOs (joint with general medicine - see above)

Refer to the general medicine staffing arrangements for the combined rota arrangements.

7 General surgery and urology (10 654 FCEs)

General surgery

6 Consultants

1 Staff grades

1 Associate specialist

3 SpRs+1 clinical fellow at SpR grade

4 SHOs

6 PRHOs

Urology

3 Consultants

1 Associate specialist

1 SpR

2 PRHO

1 Trust doctor (house officer level)

Levels of cover for out-of-hours work in general surgery

Consultants 1:6

SpRs and SHOs 24-hour partial shift

PRHOs full/partial shift

Hybrid rota

Current contractual arrangements

(i) General surgery: the general surgery SpRs/SHOs covered urology overnight.

(ii) The urology consultants did a 1:4 separate rota which included the associate specialist (with backup from a consultant). The urology SpR provided daytime cover+1:7 evening on call.

8 Orthopaedics and trauma (3744 FCEs)

9 Consultants

1 Staff grade

4 SpRs

1 Associate specialist, 1 clinical fellow

5 SHOs

1 Trust doctor

Levels of cover for out-of-hours work

Consultants 1:9

SpRs+staff grade 1:6, 24-hour partial shift

SHOs+trust doctors 1:6, 16 hour partial shift

Contractual arrangements

Consultants 1:9

SpR equivalents with staff grade 1:6, 24-hour partial shift

SHOs 1:6, 16-hour partial shift (band supplement, 2A)

The SHOs and SpRs operated a trauma week arrangement on a rolling 1:7 programme.

Appendix 3 The fieldwork interviews

Semi-structured interviews were carried out with representatives of the medical Royal Colleges, the Joint Higher Training Committees, regional postgraduate deaneries and other relevant institutions between June 2003 and January 2004. The institutions and the representatives who were interviewed are cited at the end of this appendix.

The interviews with the College representatives covered a standard set of themes:

- basic specialist training (BST),
- higher specialist training (HST),
- recognition of hospital training programmes,
- manpower issues,
- the New Deal and the EWTD,
- trends and policy developments.

In preparation for each interview, the relevant training curricula and manpower documents were examined to identify key issues and a list of points was prepared. These lists were quite detailed. An example, prepared for ophthalmology, is reproduced below. Shortly before the interviews, the lists were sent to the representatives. The discussions in the interviews either closely followed the lists of points or were more wide ranging and the interviewers used the list as an aide-memoire.

Three researchers undertook the interviewing (DD, RD and BN), usually in pairs. The interviews were mostly tape recorded and verbatim transcriptions of the tapes were prepared. To facilitate analysis, the transcriptions were edited individually by bringing together statements relating to particular themes. The edited transcriptions were finally bound together in a volume for ease of reference.

The interviews benefited the project by providing the researchers with an in-depth understanding of national policies, in their complexity, that are impinging on the delivery of postgraduate training in the NHS at the present time. The researchers also appreciated better the different issues and problems concerning hospital specialties, which is why the report provides so many inter-specialty comparisons.

Points for the interview in the Royal College of Ophthalmologists

BST in ophthalmology

The curriculum for BST on the web is dated 1999. It expected trainees at SHO level to spend 2 years reaching the prescribed level of attainment in training placements recognised by the College Training Committee before entry to HST (plus acquiring an appropriate exam).

- Is the BST curriculum issued in 1999 still current? If not, what changes have been introduced?

- The 1999 curriculum advised that SHOs should undertake 50 cataract or other intraocular procedures and 20 Yag laser posterior capsulotomies. Is this guidance still relevant and are SHOs having any difficulties fulfilling the requirements?
- At what point in their post-registration training (i.e. after the PRHO year) do SHOs (surgical or medical) usually elect to take up ophthalmology?
- Are ophthalmology SHO posts normally organised in training programmes involving trainees moving between hospital trusts? Do trainees tend to travel between hospitals on a weekly basis as well as moving from post to post during their time in a training programme?

HST in ophthalmology

Updated HST curriculum in ophthalmology is dated in March 2003 (the medical ophthalmology curriculum was published in March 2002). For HST, seven sub-specialties are recognised.

- To what extent does the 2003 curriculum in ophthalmology differ from the previous version? And has the college adopted an approach towards competency-based higher surgical training that is in line with the other higher training committees (e.g. for medicine and surgery)?
- The new curriculum advises higher specialist trainees on numbers of procedures needed for essential clinical experience. (In the cornea and external diseases subspecialty, a minimum of six corneal transplant operations, and in the cataract and refractive surgery subspecialty, 300 complete surgical cataract cases as SpR.) Are these targets similar to the past curriculum? How were they determined (e.g. via from research evidence)?
- When was the distinction between medical ophthalmology and ophthalmology (surgical) introduced? What is the ratio of trainees in these two specialties?
- Can the college envisage a shortening of the HST training period (4.5 years in ophthalmology and 5 years for medical ophthalmology) to allow numbers of less experienced 'generalists' to come on stream, and is the college in favour of this?

Re-configuration of training schemes

The college has maintained over a number of years a directory of all approved eye units in the UK.

- To what extent have trusts' ophthalmic services been re-configured in recent years? If so, has the 'driver' been primarily service delivery or training? And what impact has the re-configuration movement had on basic surgical training?
- Would past copies of the directory indicate where training slots have been lost or transferred between approved units (as a proxy for observing where re-configuration of inpatient and outpatient services has taken place)?
- How much emergency experience or night-time work is needed by trainees (especially SHOs)? And have training schemes been re-configured to provide on-call experience for trainees at night? Are further re-configurations expected for this purpose?

- In ophthalmology training schemes or programmes (both at BST and HST levels) are there more approved posts than trainees (to allow trainees to exercise choice over sub-specialty interests)?

Manpower issues

In the Department of Health (DH) 30 September 2002 census, there were 661 wte consultants, 333 registrars, 396 SHOs, 132 associate specialists and 248 staff grades.

- (A recent *BMJ* careers supplement had only four advertisements for recognised ophthalmology SHO posts in England and three for staff doctors.) Has the college wished to see greater numbers of SHO posts created in ophthalmology? If so, what have been the constraints?
- BST trainer:trainee ratio. Does the college set targets for these ratios, and if so, what are they?
- In the 2003/2004 allocation of national training numbers (NTNs), there are 40 locally funded NTNs in ophthalmology. How far do this allocation meet the expectations of the college?
- The allocation of 2003/2004 NTNs is being undertaken, for the first time, on a capitation basis. What views does the college have about this method of allocation across workforce-development confederations (WDCs) and deaneries?
- As far as the college is aware, has sufficient local funding been identified for the allocated NTNs? And is it concerned that the principle of local funding might cause difficulties for the expansion of the specialty in the future?
- Ophthalmology services are very dependant on associate specialists and staff-grade doctors. Is this a problem?
- Are many staff doctors and associate specialists likely to apply for the new CCSE when the new regulations are enacted under the auspices of the Postgraduate Medical Education and Training Board (PMETB)?
- Does the college keep detailed numbers on the trends in specialty and sub-specialty training, and are there targets for this? If so, are these based according to need?

New Deal/EWTD

- Twenty-four-hour on call will not be an option after August 2004, and as a minimum of 8–10 trainees are needed to maintain a full shift system and preserve training, how will this be achieved in eye units nationwide?
- Does the college envisage closure and amalgamation of acute services across hospital units as a result?

Trends and policy developments

- Are the new suggestions proposed for Modernising Medical Careers (*Unfinished Business*) likely to have an impact on training for the specialty?
- How well developed, or organised, is the concept of 'networking' in ophthalmology services?
- Ophthalmology services are strongly multi-disciplinary in orientation. Does the college anticipate changing patterns in delivery of care, especially to the ageing

population, to impact on the demand for doctors in training and the delivery of training?

- More immediately, will the development of Diagnostic and Treatment Centres affect training, or will these be viewed purely as providing service and reducing waiting list times?

Institutions and representatives who were interviewed in 2003, and the positions held by the representatives when interviewed

Colleges and higher training committees

Faculty of Accident & Emergency Medicine, Dr Alastair McGowan, President

Joint Committee on Higher Surgical Training, Mr John Smith, Immediate Past Chairman

Joint Higher Medical Training Committee, Dr George Cowan, Chairman

Royal College of Anaesthetists, Professor Peter Hutton, Immediate Past President

Royal College of Obstetricians & Gynaecologists, Professor Bill Dunlop, President, and Mrs Belinda Grantham-Hill, Head of Postgraduate Training

Royal College of Ophthalmologists, Mr Nick Astbury, President, and Mr Stuart Cook, Chairman of the Training Committee

Royal College of Paediatrics & Child Health, Professor Alan Craft, President

Royal College of Physicians of London, Professor Parveen Kumar, Vice-President

Royal College of Psychiatrists, Dr Mike Shooter, President, and Professor Bhugra, Dean

Royal College of Surgeons of England, Mr Hugh Phillips, Vice-President, and Mr Bernard Ribeiro, Member of Council

Deaneries and other training bodies

Conference of Postgraduate Medical Deans (COPMED), Professor Peter Hill, Chairman

Eastern Region Postgraduate Deanery, Dr Huw Jones, Postgraduate Dean

Northern Region Postgraduate Deanery, Dr Deborah McInerny, Associate Postgraduate Dean

Specialist Training Authority, Professor Sir John Temple, Chairman, and Ms Lesley Hawkesworth, Chief Executive

Other organisations

Department of Health, Mr Paul Loveland, Head of Post Qualification Learning

Hillingdon Hospital NHS Trust, Mr Trevor Mayhew, Deputy Finance Director

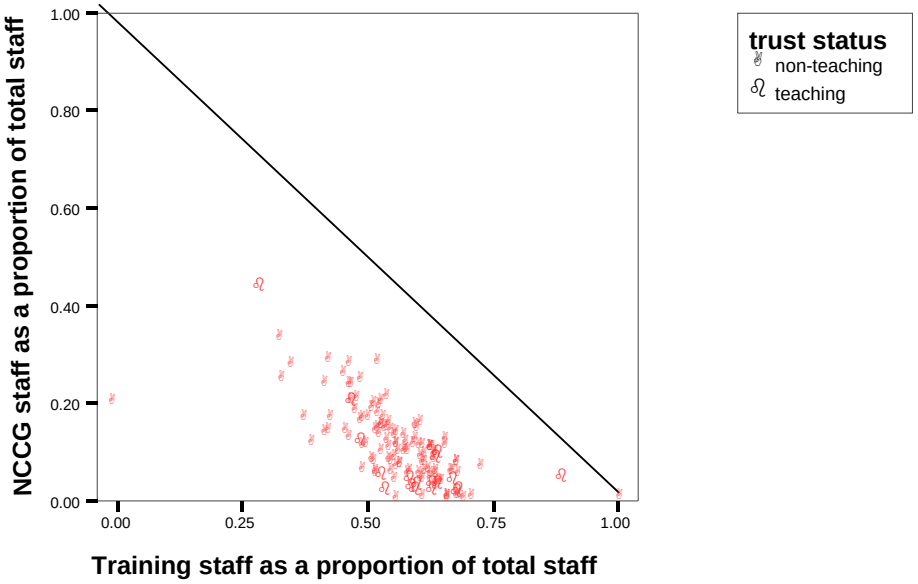
Medical Workforce Planning Team for England, Dr Judy Curson, Lead

North West London Workforce Confederation, Mr Philip Brown, Chief Executive

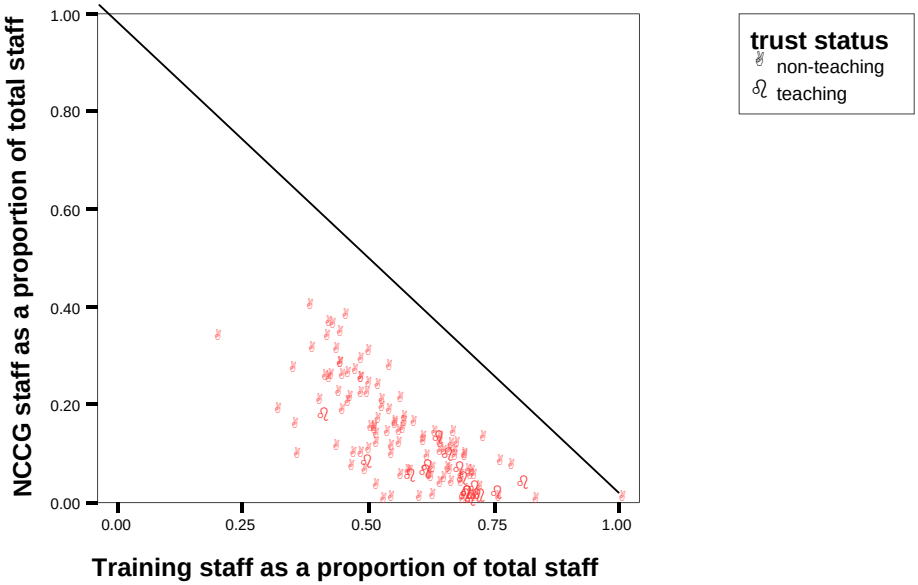
Appendix 4 Composition of staff by specialty

NCCG, non-consultant career grade.

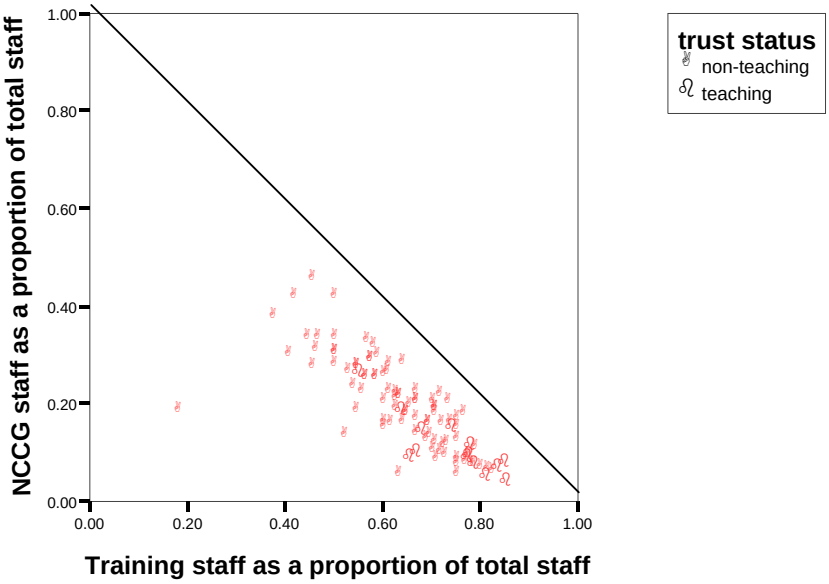
Obstetrics and Gynaecology



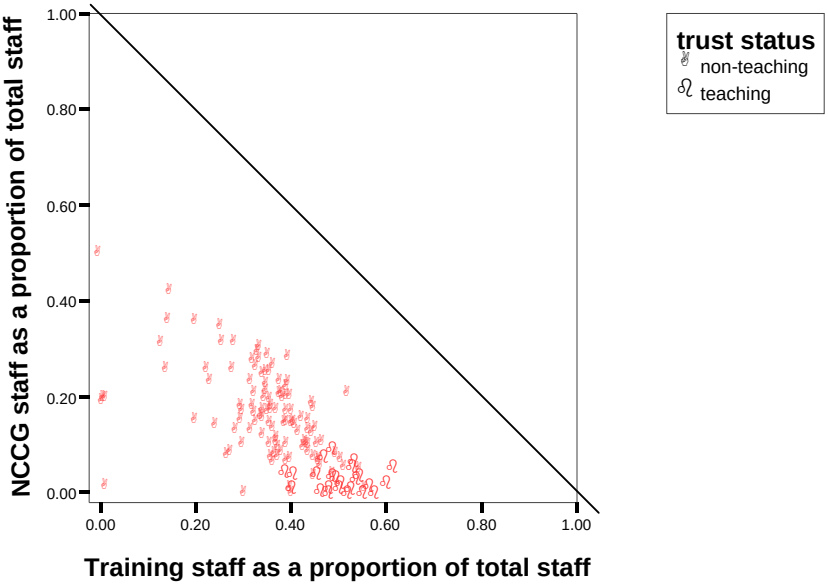
Paediatrics



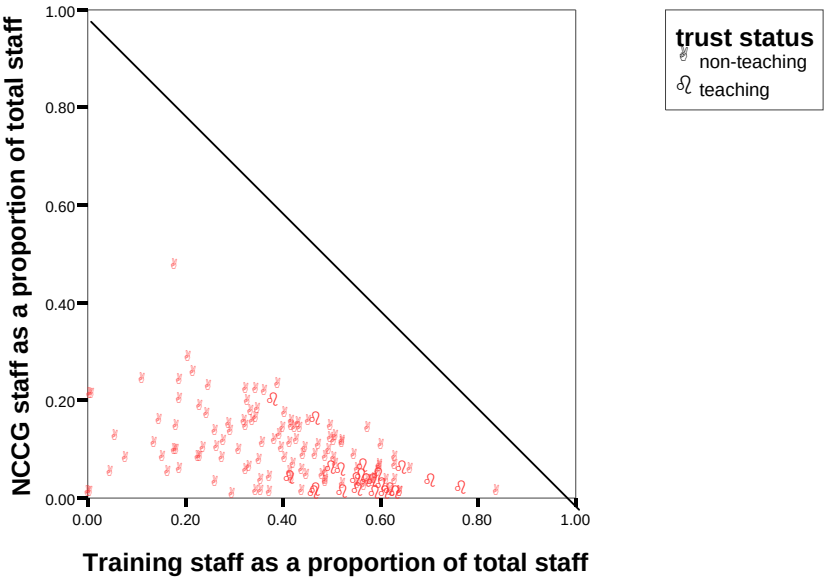
Accident & Emergency



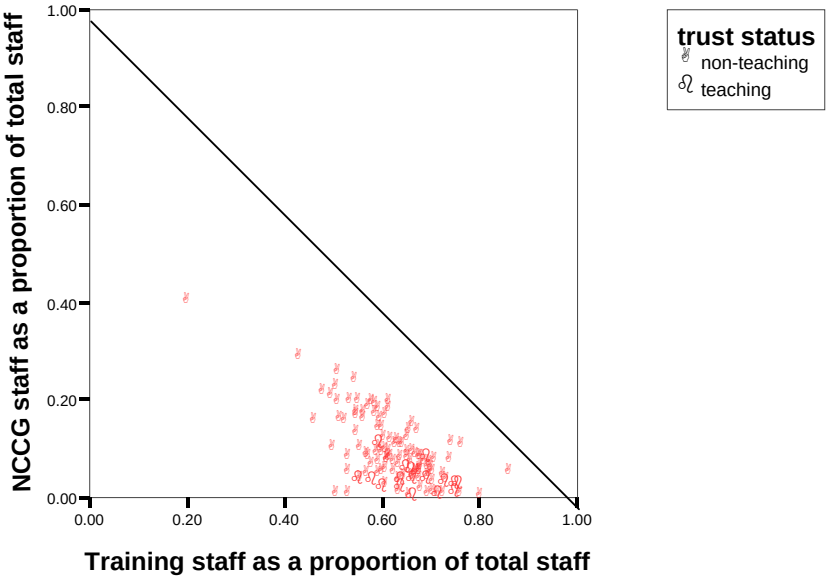
Anaesthetics



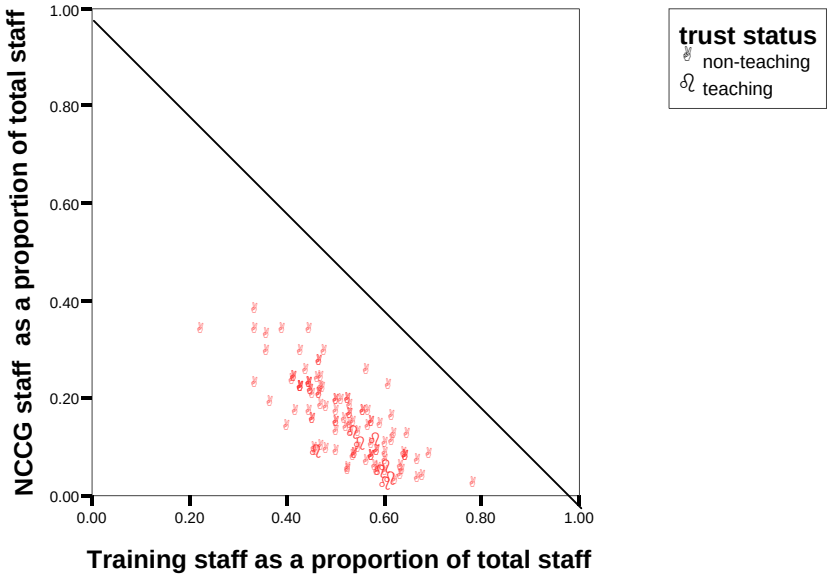
General Medicine



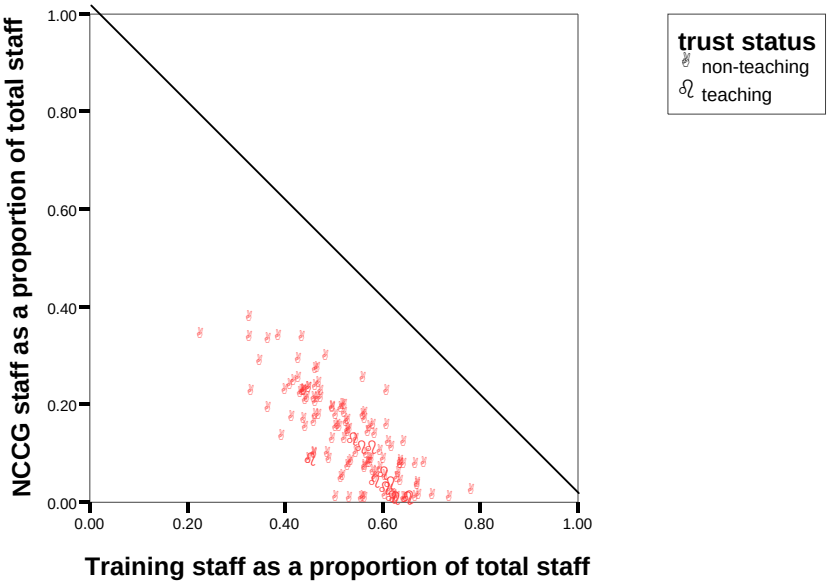
General Surgery



Urology



Trauma and Orthopaedic Surgery



Appendix 5 Survey of documents from Royal Colleges and professional associations, and their implications for configuration of services

Introduction

In this component of the project, published reports of Royal Colleges, Joint Higher Training Committees and professional associations were surveyed and reviewed. The work closely replicated the document review undertaken in 1996 for the original project on concentration and choice in the provision of hospital services (Dowie and Sykes, 1996). The work aimed to:

(i) assemble relevant documentation;

(ii) identify in the documents explicit guidance relating to training requirements, minimum staffing levels, workloads and service provision;

(iii) to inform discussions held with representatives of the relevant Colleges and Higher Training Committees to clarify

- the timeliness of the documents;
- the relative importance of the documents' guidance in view of more recent policy developments.

The following analysis applies only to the survey of documents.

Selection of hospital specialties

More than 60 hospital specialties were recognised by the Specialist Training Authority in 2003, many of which were concentrated in tertiary centres and had a small medical workforce. So the documents survey focused on larger specialties likely to be represented in district hospitals as well as in tertiary centres. The criterion for selecting the specialties was based on the 2003/2004 allocations of NTNs for specialist registrars in England issued in March 2003 by the Medical Workforce Review Team (2003). Thus the survey covered specialties that were allocated 20 or more NTNs (including both centrally funded and locally funded numbers):

A&E medicine*

Anaesthetics

General medicine* and the sub-specialties of:

- Cardiology*
- Dermatology
- Endocrinology and diabetes
- Gastroenterology
- Geriatric medicine

Neurology

- Renal medicine*

Respiratory medicine

Rheumatology

General surgery* and the sub-specialties of:

Otolaryngology

Trauma and orthopaedics*

Urology

Ophthalmology

Obstetrics and gynaecology*

Paediatrics*

Psychiatry (the specialties of general adult psychiatry and old age psychiatry).

Note: the specialties marked by an asterisk were covered in the 1996 review. In addition, the 1996 survey covered cardiothoracic surgery, clinical oncology and clinical radiology, intensive care, pathology and renal transplantation.

In addition, the 2003 review covered guidance on the provision of hospital specialty experience for doctors entering general practice.

Methods

Unlike the 1996 survey, when the relevant literature was obtained directly from the Royal Colleges, joint committees and professional associations, documents for the 2003 survey were identified by systematically searching the websites of the respective bodies. These are listed in Appendix 5, Annex A. To ensure completeness, checks were made during the interviews with the college representatives. In addition, literature searches were made of journals sponsored by the Royal Colleges and professional associations. The journals are listed in Appendix 5, Annex B.

To be included in the survey, documents had to satisfy three criteria of relevance: (i) they must refer to the provision of hospital-based services; (ii) they must include training or service guidance and (iii) the guidance must be the latest publicly available. The survey covered publication dates between August 1996, when the previous survey was completed, and December 2003.

All identified documents were checked to see if the training or service guidance was directly related in some respects to the delivery of services. Those concerned primarily with structuring training and assessing trainees' competencies were set aside. Annex B lists the documents that met the inclusive criteria as well as the excluded documents.

The relevant documents were reviewed and the guidance summarised using the data-extraction template developed for the 1996 review. For each document, the reviewer (i) abstracted the guidance of relevance to the organisation of clinical services, (ii) assessed whether the guidance could directly or indirectly impact on service configurations (i.e. volume and concentration implications) and (iii) cited any justification for the recommendations and whether it was based on research evidence. The templates, organised by specialty, are reproduced in Appendix 5, Annex C.

Results

A total of 82 documents were identified, of which 56 met the criteria of relevance. The comparative numbers for 1996 were 167 identified documents and 66 of relevance.

Table A5.1 Authorship and scope of documents reviewed in 1996 and 2003

Scope of recommendations	Authorship and year of survey							
	Royal College training committees		Royal College service / manpower committees		Professional associations		Total documents	
	1996	*2003*	*1996*	*2003*	*1996*	*2003*	*1996*	*2003*
Training	15	39	–	1	2	6	17 (25%)	46 (82%)
Service	1	–	22	2	18	3	42 (64%)	5 (9%)
Both training and service	3	1	–	3	5	1	8 (12%)	5 (9%)
Total	19	40	22	6	25	10	66 (100%)	56 (100%)

Authorship and scope

Table A5.1 shows a striking difference in the patterns of authorship of the documents between the two surveys. Overall, in 2003, 71% were from college training committees, unlike in 1996, when 71% were authored either by college manpower or other non-training committees or professional associations. As a consequence, 82% of documents in 2003 focused solely on training compared with the earlier rate of 25%.

Specialties and scope

Over half the 2003 documents were in four specialties – obstetrics and gynaecology (14), paediatrics (7), anaesthetics (7) and ophthalmology (5) – see Table A5.2. The table also shows that among the 51 documents focusing on training, 32 (63%) had volume implications: seven in paediatrics, six in obstetrics and gynaecology, and four in ophthalmology.

Table A5.2 Documents with recommendations in 2003 by specialty

Specialty	Number of documents surveyed				
	Training		Service delivery		Total documents
	Recommendations	*Volume implications*	*Recommendations*	*Volume implications*	
A&E medicine	3	3	1	–	4
Anaesthetics	6	2	4	4	7
General medicine (internal)	2	1	1*	1*	3
Cardiology	1	1	1	1	2
Dermatology	1	–	–	–	1

Endocrinology and diabetes	1	–	–	–	1
Gastroenterology	1	–	–	–	1
Geriatric medicine	–	–	–	–	–
Neurology	–	–	–	–	–
Renal medicine	1	1	–	–	1
Respiratory medicine	1	1	–	–	1
Rheumatology	–	–	–	–	–
General surgery	3	3	1†	1†	4
Otolaryngology	–	–	–	–	–
Trauma and orthopaedics	2	2	–	–	2
Urology	1	1	–	–	1
Ophthalmology	5	4	–	–	5
Obstetrics and gynaecology	14	6	2	–	14
Paediatrics	7	7	–	–	7
Psychiatry	1	–	–	–	1
Specialty training for general practice	1	–	–	–	1
Total	51	32	10	7	56‡

** The service-delivery recommendations in the general medicine document also covered the other nine medical specialties.*

†The service-delivery recommendations in the general surgery document also covered the other surgical specialties (excluding ophthalmology).

‡Five documents contained service-delivery recommendations only: A&E medicine (1), anaesthetics (1), general medicine (1), cardiology (1) and general surgery (1).

Training-related volume implications

The training recommendations with volume implications are categorised in Table A5.3 as (i) training recognition for units or hospital departments and (ii) targets for trainees' clinical experience. Table A5.3 also distinguishes between the levels of training – basic training undertaken by SHOs and higher training undertaken by SpRs.

Table A5.3 Categorisation of recommendations with volume implications by specialty

Specialty and level of training	Types of training recommendation with volume implications		
	(i) Recognition of units for training		*(ii) Trainees' experience (procedures performed)*
	Population served or minimum throughput	*Consultant staffing level or ratio to trainee*	
A&E medicine			
Basic	√		
Higher	√ √	√	
Anaesthetics			
Higher – subspecialties	√		√
General internal medicine and medical specialties			
Internal - higher	√		
Cardiology - higher	√		
Renal medicine - higher		√	
Respiratory medicine - higher	√		√
General surgery and surgical specialties			
Basic		√	
Higher (all specialties)		√	
General - Higher		√	
Trauma and orthopaedics			
Basic		√	
Higher		√	
Urology – higher		√	
Ophthalmology			
Basic		√	√
Higher		√	√√
Obstetrics and gynaecology			
Higher – subspecialties	√√√		√
Higher – special skills	√√		√
Paediatrics			
Basic	√	√	
Higher – subspecialties	√√√√	√√√	√√

A tick (√) represents a document containing training recommendations with volume implications.

Training recognition

The volume implications, directly or indirectly, were of two kinds. One was a requirement that units had sufficient caseloads for training purposes and this was to be assessed, as a proxy, by the size of population served or, more specifically, by a unit's throughput. The second kind was a requirement that the units had sufficient consultant staff for training purposes and it was to be assessed either by the unit's total consultant establishment or by its trainer/trainee ratio. The higher training committees for the medical specialties and A&E medicine focused on the caseload requirement and the surgical higher training committees on the staffing requirement. Anaesthetics, obstetrics and gynaecology, and paediatrics also had caseload requirements but they were directed not at units providing generic or core higher training (e.g. in district hospitals) but at centres offering sub-specialty or special skills training which trainees would experience within their rotation programmes. Finally, although not a requirement for training recognition, the manual covering higher training in all nine surgical specialties, issued by the Joint Committee of Higher Surgical Training (2003a), advised that parallel operating lists (where a consultant operates in one theatre and a trainee operates in an adjacent theatre) are not acceptable for training purposes.

Trainee experience

Nine documents in Table A5.3 cited minimum numbers of procedures or cases that trainees should undertake. However, this finding needs to be set in context. In the four documents for the specialties of respiratory medicine and ophthalmology, the recommended numbers were to be achieved during the span of trainees' time (years) in basic or higher training. (The surgical specialties of cardiothoracic surgery and paediatric surgery also identify volumes of operative exposure during higher training; Joint Committee for Higher Surgical Training, 2003b, 2003c). In contrast, four other documents applied to sub-specialty training undertaken within higher training programmes: the two documents in obstetrics and gynaecology referred to one of five sub-specialties and one of six special skills modules, while the two documents for paediatrics referred to two of nine hospital sub-specialties. The document for anaesthetics in Table A5.3 applied to four of seven sub-specialties (key units of training).

Service delivery

Since only seven documents in 2003 contained volume implications for service delivery (Table A5.2) they were not analysed in detail. Instead, attention was focused on two college documents published in 2001 that contained target consultant/population ratios for medical and surgical specialties. These documents updated earlier recommendations from the 1990s (1993/1994 followed by 1998). The targets in Table A5.4 show a marked reduction in populations served over the 7-year period, no doubt a reflection of the steadily improving consultant staffing levels within the NHS. (On average, the number of hospital consultants in England grew by 4.7% each year during the period 1992–2002; 4.8% for medical specialties and 4.5% for surgical specialties (Department of Health, 2003).) Working groups in the medical and surgical colleges formulated the 2001 targets, based on submissions from the respective specialist associations and from other sources, including manpower censuses undertaken regularly by the colleges (e.g. Federation of Royal Colleges of

Physicians of the United Kingdom, 2003) and associations (e.g. British Orthopaedic Association, 2003). Account was also taken of national policy initiatives with manpower consequences, notably the Government's National Service Frameworks and, now, the Care Group Workforce Teams.

Table A5.4 Consultant manpower targets, 1993/1994, 1998 and 2001, for surgical and medical specialties from the Royal Colleges and professional associations

(a) Surgical specialties

Specialty	Population/consultant		
	1994	*1998**	*2001*
General surgery	30 000	30 000	25 000
Trauma and orthopaedics	40 000	30 000	25 000
Otolaryngology	80 000	75 000	75 000
Urology	100 000	100 000	80 000
Plastic	187 000	125 000	100 000
Oral and maxillofacial surgery	200 000	167 000	150 000
Cardiothoracic	375 000	–	182 000
Neurosurgery	375 000	–	250 000
Paediatrics	500 000	–	300 000

(b) Medical specialties

Specialty	Population/consultant		
	1993/1994	*1998**	*2001*
Cardiology	125 000	90 000	50 000
Gastroenterology	100 000	90 000	42 000
Respiratory medicine	100 000	90 000	50 000
Diabetes and endocrinology	–	90 000	62 500
Care of the elderly	–	90 000	50 000
Neurology	–	90 000	100 000
Renal medicine	–	150 000	117 000
Dermatology	–	–	85 000–100 000
Rheumatology	–	–	85 000

**Estimates based on an acute general hospital group serving a population of 450 000.*

Sources for Table A5.4

1993/1994

Corris, P. 1993. *Requirements for good practice in respiratory medicine*. London: British Thoracic Society.

Farthing, M.J.G. *et al*. 1993. *Nature and standards of gastrointestinal and liver services in the UK*. London: British Society of Gastroenterology.

McLeod, A.A. *et al*. 1994. *Cardiology in the district hospital*. London: British Cardiac Society.

Senate of the Royal Surgical Colleges of Great Britain and Ireland. 1994. *Consultant practice and surgical training in the United Kingdom*. London: Royal College of Surgeons of England.

1998

British Medical Association, Royal College of Physicians of London, Royal College of Surgeons of England. 1998. *Provision of acute general hospital services*. London: Royal College of Surgeons of England.

2001

Royal College of Physicians of London. 2001. *Consultant physicians working for patients*. Second edition. London: Royal College of Physicians.

Royal College of Surgeons of England. 2001. *The surgical workforce in the new NHS*. London: Royal College of Surgeons.

Citation of supporting evidence

Ten documents in the 2003 survey cited supporting evidence or references, and the documents were mainly concerned with the organisation and delivery of services. The cited references were usually other policy documents. However, two documents were particularly reliant on research evidence: one was about the provision of anaesthetic services (Royal College of Anaesthetists, 1999) and the other was on cardiac services (British Cardiac Society, 2002). Finally, two documents developed recommendations based on workforce census results. The 1996 documents survey also observed that relatively few documents (eight) cited research-based evidence and they all covered service-delivery issues.

Summing up

The 2003 review of documents containing training or service guidance found that:

- four-fifths of the documents focused solely on training;
- college training committees were the authors of nearly three-quarters of the documents.

The converse was observed in 1996: only a quarter of the documents were solely about training and college training committees authored fewer than a third. There were volume implications, either directly or indirectly, in almost two-thirds of the 2003 training documents and the implications were mainly relevant to units wishing to be recognised for training. The priority for the surgical specialties was adequate staffing levels whereas the medical specialties stressed patient throughput. The specialties which offer sub-specialty training as modules within higher training programmes, in particular obstetrics and gynaecology and paediatrics, were concerned that centres identified for advanced training would have sufficient volumes of suitable cases. Relatively few documents focused on trainees' experience and again the emphasis differed. One group identified targets of procedures that trainees should accomplish over the duration (in years) of their training programme; the other documents, again in obstetrics and gynaecology and paediatrics, set targets for sub-specialty modules of training programmes. But, targets were set for only four of the 20 sub-specialty or special skills modules offered by these two specialties.

The analysis of service-delivery implications was confined to consultant/population ratios recommended by the surgical and medical Royal Colleges between 1993/1994 and 2001. The diminution in the targets over the period was consistent with the observed annual expansion in consultant physicians and surgeons in the NHS. Finally, both in 1996 and 2003, very few documents utilised research evidence. The wider implications from the 2003 documents survey are explored in the main project report.

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Dowie, R. and Sykes, D. 1996. *Content of recommendations of Royal Colleges and Professional Associations and the implications for configuration of services*. Technical appendix 4, vol. 1, of Concentration and choice in the provision of hospital services. University of York, York: York Health Economics Consortium.

Federation of the Royal Colleges of Physicians of the United Kingdom. 2003. *Census of consultant physicians in the UK, 2002. Data and commentary*. London: Royal College of Physicians of London.

Joint Committee of Higher Surgical Training. 2003a. *A Manual of Higher Surgical Training in the UK and Ireland*. London: Joint Committee for Higher Surgical Training.

Joint Committee for Higher Surgical Training. 2003b. *A curriculum for higher specialist training in cardiothoracic surgery*. London: Joint Committee for Higher Surgical Training.

Joint Committee for Higher Surgical Training. 2003c. *Higher specialist training in paediatric surgery. Curriculum, educational content and structure of training programmes*. London: Joint Committee for Higher Surgical Training.

Medical Workforce Review Team. 2003. Allocation of locally and centrally funded NTNs 2003/4 [letter]. *The Workforce Bulletin* issue 59: 3 March 2003. Available at www.wdc.nhs.uk/bulletins/bulletin_59.php

Royal College of Anaesthetists. 1999. *Guidelines for the provision of anaesthetic services*. London: Royal College of Anaesthetists.

Appendix 5 Annex A: Medical Royal Colleges, Joint Higher Training Committees and professional associations relevant to the surveyed specialties in England

A&E medicine

Faculty of Accident & Emergency Medicine, www.faem.org.uk

Royal College of Surgeons of England (for basic training in A&E medicine)

British Association for Accident & Emergency Medicine, www.baem.org.uk

Anaesthetics

Royal College of Anaesthetists, www.rcoa.ac.uk

Association of Anaesthetists of Great Britain and Ireland, www.aagbi.org

General medicine and medical sub-specialties

Royal College of Physicians of London, www.rcplondon.ac.uk

Joint Committee on Higher Medical Training, www.jchmt.org.uk

Association of British Neurologists, www.theabn.org

British Association of Dermatology, www.bad.org.uk

British Cardiac Society, www.bcs.com

British Geriatric Society, www.bgs.org.uk

British Society of Gastroenterology, www.bsg.org.uk

British Society for Rheumatology, www.rheumatology.org.uk

British Thoracic Society, www.brit-thoracic.org.uk

Diabetes UK, www.diabetes.org.uk

Renal Association, www.renal.org

Society for Endocrinology, www.endocrinology.org

General surgery and surgical sub-specialties

Royal College of Surgeons of England, www.rcseng.ac.uk

Joint Committee on Higher Surgical Training, www.jchst.org

Association of Surgeons of Great Britain and Ireland, www.asgbi.org.uk

British Orthopaedic Association, www.boa.ac.uk

British Association of Urological Surgeons, www.baus.org.uk

British Association of Otorhinolaryngologists, www.entuk.org

Ophthalmology

Royal College of Ophthalmologists, www.rcophth.ac.uk

Obstetrics and gynaecology

Royal College of Obstetricians and Gynaecologists, www.rcog.org.uk

British Association of Perinatal Medicine, www.bapm.org

British Fertility Society, www.britishfertilitysociety.org.uk

British Gynaecological Cancer Society, www.gynaeonc.net

British Maternal & Fetal Medicine Society, www.bmfms.org.uk

British Menopause Society, www.the-bms.org

British Society for Clinical Cytology, www.clinicalcytology.co.uk

British Society for Colposcopy and Cervical Pathology, www.bsccp.org.uk

British Society for Paediatric and Adolescent Gynaecology

British Society of Urogynaecology

Paediatrics

Royal College for Paediatrics and Child Health, www.rcpch.ac.uk

British Association of Perinatal Medicine, www.bapm.org

British Society for Paediatric Endocrinology and Diabetes, www.bsped.org.uk

British Paediatric Allergy, Immunity and Infection Group, www.bpaiig.org

British Association for Paediatric Nephrology, www.bapn.uwcm.ac.uk

British Paediatric Neurology Association, www.bpna.org.uk

Paediatric Rheumatology European Society, www.pres.org.uk

British Society of Paediatric Gastroenterology, Hepatology & Nutrition
www.bspghan.org.uk

Psychiatry

Royal College of Psychiatrists, www.rcpsych.ac.uk

General practice

Royal College of General Practitioners, www.rcgp.org.uk

Joint Committee on Postgraduate Training for General Practice, www.jcptgp.org.uk

Appendix 5 Annex B: Documents identified and either included or excluded from the data-abstraction process, and journals

Documents meeting the inclusion criteria and abstracted in the templates

A&E medicine

British Association for A&E Medicine. The Way Ahead 1998: British Association for A&E Medicine; 1998 (October 1998).

Faculty of A&E Medicine. Higher Specialist Training A&E Medicine: Faculty of A&E Medicine; 2003 (February 2003).

Joint Committee on Higher Training in A&E Medicine. Educational Recognition of Posts in A&E Medicine: Faculty of A&E Medicine; 2003 (February 2003).

Royal College of Surgeons. The Manual of Basic Surgical Training: Royal College of Surgeons; 1998 (September 1998).

Anaesthetics

Association of Anaesthetists. Provision of Pain Services: Association of Anaesthetists; 1997 (September 1997).

Association of Anaesthetists. Guidelines for Obstetric Anaesthesia Services: Association of Anaesthetists; 1998 (September 1998).

Royal College of Anaesthetists. Guidelines for the provision of Anaesthetic Services 1999: Royal College of Anaesthetists; 1999.

Royal College of Anaesthetists. The CCST in Anaesthesia. II: Competency Based Senior House Officer Training and Assessment: Royal College of Anaesthetists; 2003 (April 2003).

Royal College of Anaesthetists. The CCST in Anaesthesia. III: Competency Based Specialist Registrar Years 1 and 2 Training and Assessment: Royal College of Anaesthetists; 2003 (April 2003).

Royal College of Anaesthetists. The CCST in Anaesthesia. IV: Competency Based Specialist Registrar Years 3, 4 and 5 Training and Assessment: Royal College of Anaesthetists,; 2003 (April 2003).

Royal College of Anaesthetists. Guidance on the provision of paediatric anaesthetic services: Royal College of Anaesthetists; 2003 (July 2003).

General medicine and medical specialties

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for General (Internal) Medicine: JCHMT; 2003 (January 2003).

Royal College of Physicians. General Professional Training: Handbook: Royal College of Physicians; 2000 (March 2000).

Royal College of Physicians. Consultant Physicians Working for Patients: Royal College of Physicians; 2001 (November 2001).

Cardiology

British Cardiac Society. Fifth report on the provision of services for patients with heart disease: British Cardiac Society; 2002.

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Cardiology: JCHMT; 2003 (April, 2003).

Dermatology

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Dermatology: JCHMT; 2003 (February 2003).

Endocrinology and diabetes

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Endocrinology & Diabetes Mellitus: JCHMT; 2003 (January 2003).

Gastroenterology

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Gastroenterology: JCHMT; 2003 (January 2003).

Renal medicine

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Renal Medicine: JCHMT; 2003 (January 2003).

Respiratory medicine

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Respiratory Medicine: JCHMT; 2003 (January 2003).

General surgery and surgical specialties

Joint Committee for Higher Surgical Training. Curriculum, Organisation and Syllabus for Higher Surgical Training in General Surgery: Joint Committee for Higher Surgical Training; 2001 (December 2001).

Joint Committee for Higher Surgical Training. A Manual of Higher Surgical Training in the UK and Ireland: Joint Committee for Higher Surgical Training; 2003 (January 2003).

Royal College of Surgeons. The Manual of Basic Surgical Training: Royal College of Surgeons; 1998 (September 1998).

Royal College of Surgeons. The Surgical Workforce in the New NHS: Royal College of Surgeons; 2001 (November 2001).

Trauma and orthopaedics

British Orthopaedic Association. Education and Training for SHOs: A Snapshot of the Moment and Recommendations for the Future: British Orthopaedic Association; 2002 (July 2002).

Joint Committee for Higher Surgical Training. The Curriculum for Higher Surgical Training in Trauma and Orthopaedic Surgery: Joint Committee for Higher Surgical Training; 1996.

Urology

Joint Committee for Higher Surgical Training. Urological Training: Joint Committee for Higher Surgical Training; 2002 (January 2002).

Ophthalmology

Royal College of Ophthalmologists. Curriculum of Basic Specialist Training in Ophthalmology: Royal College of Ophthalmologists; 1999.

Royal College of Ophthalmologists. Guide for Basic Specialist Training in Ophthalmology: Royal College of Ophthalmologists; 2000.

Royal College of Ophthalmologists. Curriculum of Higher Specialist Training in Medical Ophthalmology: Royal College of Ophthalmologists; 2002 (March 2002).

Royal College of Ophthalmologists. Guide for Higher Specialist Training in Ophthalmology: Royal College of Ophthalmologists; 2003 (March 2003).

Royal College of Ophthalmologists. Curriculum of Higher Specialist Training in Ophthalmology: Royal College of Ophthalmologists; 2003 (March 2003).

Obstetrics and gynaecology

British Fertility Society, Royal College of Obstetricians and Gynaecologists. Assisted Reproduction: Royal College of Obstetricians and Gynaecologists; 2002 (June 2002).

British Fertility Society, Royal College of Obstetricians and Gynaecologists. The Management of the Infertile Couple: Royal College of Obstetricians and Gynaecologists; 2002 (June 2002).

Royal College of Obstetricians and Gynaecologists. Subspecialisation in maternal and fetal medicine: Royal College of Obstetricians and Gynaecologists; 1997 (December 1997).

Royal College of Obstetricians and Gynaecologists. Subspecialisation in reproductive medicine: Royal College of Obstetricians and Gynaecologists; 1997 (December 1997).

Royal College of Obstetricians and Gynaecologists. Subspecialisation in urogynaecology: Royal College of Obstetricians and Gynaecologists; 1998 (August 1998).

Royal College of Obstetricians and Gynaecologists. Subspecialisation in gynaecological oncology: Royal College of Obstetricians and Gynaecologists; 2002 (May 2002).

Royal College of Obstetricians and Gynaecologists, Faculty of Family Planning and Reproductive Health. Subspecialisation in sexual and reproductive health: Royal College of Obstetricians and Gynaecologists; 2003 (May 2003).

Royal College of Obstetricians and Gynaecologists. Maternal Medicine: Royal College of Obstetricians and Gynaecologists,; 2002 (June 2002).

Royal College of Obstetricians and Gynaecologists. Ultrasound Imaging in the Management of Gynaecological Conditions: Royal College of Obstetricians and Gynaecologists; 2002 (June 2002).

Royal College of Obstetricians and Gynaecologists. Urodynamics. In collaboration with the British Society of Urogynacecology: Royal College of Obstetricians and Gynaecologists; 2002 (June 2002).

Royal College of Obstetricians and Gynaecologists. Preparing for Obstetric Leadership on the Labour Ward: Royal College of Obstetricians and Gynaecologists; 2003 (October 2003).

Royal College of Obstetricians and Gynaecologists. A Blueprint for the Future. A Working Party Report on The Future Structure of the Medical Workforce and Service Delivery in Obstetrics and Gynaecology: Royal College of Obstetricians and Gynaecologists; 2000 (December 2000).

Royal College of Obstetricians and Gynaecologists. Clinical Standards. Advice of Planning the Service in Obstetrics and Gynaecology: Royal College of Obstetricians and Gynaecologists; 2002 (July 2002).

Royal College of Obstetricians and Gynaecologists. Trainees Committee. Survey of Training 2002: Royal College of Obstetricians and Gynaecologists; 2003 (August 2003).

Paediatrics

British Paediatric Allergy IaIG. Sub-Specialty Training in Paediatric Allergy, Immunology & Infectious Diseases: British Paediatric Allergy, Immunity and Infection Group; 2003 (April 2003).

British Paediatric Neurology Association. Recommendations for Higher Specialist Training in Paediatric Neurology: British Paediatric Neurology Association; no date.

British Society for Paediatric Endocrinology and Diabetes. Training in Paediatric Endocrinology and Diabetes in the United Kingdom: British Society for Paediatric Endocrinology and Diabetes; no date.

British Society of Paediatric Gastroenterology, Hepatology and Nutrition. Recommendations for Training in Paediatric Endoscopy: British Society of Paediatric Gastroenterology, Hepatology and Nutrition; no date.

British Society of Paediatric Gastroenterology, Hepatology and Nutrition. College Specialist Advisory Committee on Paediatric Gastroenterology, Hepatology and Nutrition: British Society of Paediatric Gastroenterology, Hepatology and Nutrition; 2000.

Paediatric Rheumatology European Society. European Training Syllabus and Programme in Paediatric Rheumatology: Paediatric Rheumatology European Society; no date.

Royal College of Paediatrics and Child Health. Sub-Specialty Training in Neonatal Medicine: Royal College of Paediatrics and Child Health; 2001 (October 2001).

Psychiatry

Royal College of Psychiatrists. Basic Specialist Training Handbook: Royal College of Psychiatrists; 2003 (January 2003).

Specialty training for general practice

Joint Committee on Postgraduate Training for General Practice. The Training Programme: JCPTGP; no date.

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A&E medicine

British Association for A&E Medicine. Workforce Planning in A&E Medicine 2001-2010: British Association for A&E Medicine; 2001 (June 2001).

Faculty of A&E Medicine. Curriculum for Higher Specialist Training in A&E Medicine: Faculty of A&E Medicine; 2001 (June 2001).

Faculty of A&E Medicine. Curriculum for Higher Specialist Training in Paediatric A&E Medicine: Faculty of A&E Medicine; 2001.

Anaesthetics

Royal College of Anaesthetists. The CCST in Anaesthesia. I: General Principles: Royal College of Anaesthetists; 2003 (April 2003).

General medicine and medical sub-specialties

Federation of Royal Colleges of Physicians. Core Curriculum for Senior House Officers: Federation of Royal Colleges of Physicians; 2003.

Joint Committee on Higher Medical Training. Higher Medical Training Generic Curriculum: JCHMT; 2003 (January 2003).

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Geriatric Medicine: JCHMT; 2003 (January 2003).

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Neurology: JCHMT; 2003 (January 2003).

Joint Committee on Higher Medical Training. Higher Medical Training Curriculum for Rheumatology: JCHMT; 2003 (January 2003).

General surgery and surgical sub-specialties

British Orthopaedic Association. Guide to Core Education for Higher Surgical Training Programmes in Trauma and Orthopaedic Surgery: British Orthopaedic Association; 1999 (November 1999).

British Orthopaedic Association. Education and Training for PRHOs: British Orthopaedic Association; 2003 (July 2003).

Joint Committee for Higher Surgical Training. A Curriculum for Higher Surgical Training in Neurosurgery: Joint Committee for Higher Surgical Training; 1996 (November 1996).

Joint Committee for Higher Surgical Training. Higher Surgical Training in Otolaryngology for the Certificate of Completion of Specialist Training: Joint Committee for Higher Surgical Training; 1996 (October 1996).

Joint Committee for Higher Surgical Training. Requirements for Higher Specialist Training in Plastic Surgery: Joint Committee for Higher Surgical Training; N/A.

Royal College of Surgeons. The Curriculum Framework for the General Professional Practice of Surgery (Draft): Royal College of Surgeons; 2003 (February 2003).

Ophthalmology

Royal College of Ophthalmologists. Guide for Higher Specialist Training in Medical Ophthalmology: Royal College of Ophthalmologists, 2002.

Obstetrics and gynaecology

Royal College of Obstetricians and Gynaecologists. Report of the Working Party to Audit Structured Training: Royal College of Obstetricians and Gynaecologists, 2000 (December 2000).

Royal College of Obstetricians and Gynaecologists. Special Skills Training in Obstetrics and Gynaecology. Report of a RCOG Working Party: Royal College of Obstetricians and Gynaecologists, 2002 (July 2002).

Royal College of Obstetricians and Gynaecologists. Report of the Working Party to Review Logbooks: Royal College of Obstetricians and Gynaecologists, 2002 (January 2002).

Royal College of Obstetricians and Gynaecologists. Menopause. In collaboration with the British Menopause Society: Royal College of Obstetricians and Gynaecologists, 2002 (June 2002).

Royal College of Obstetricians and Gynaecologists. Medical Workforce in Obstetrics and Gynaecology. Fourteenth Annual Report. April 2003: Royal College of Obstetricians and Gynaecologists, 2003 (April 2003).

Royal College of Obstetricians and Gynaecologists, Faculty of Family Planning and Reproductive Health. Subspecialisation in sexual and reproductive health: Royal College of Obstetricians and Gynaecologists, 2003 (May 2003).

Paediatrics

Royal College of Paediatrics and Child Health & British Association of Perinatal Medicine. Sub-Specialty Training in Neonatal Medicine: Higher Specialist Training Syllabus: Royal College of Paediatrics and Child Health; 2001 (June 2001).

Psychiatry

Royal College of Psychiatrists. Higher Specialist Training Handbook: Royal College of Psychiatrists; 1998 (March 199).

Royal College of Psychiatrists. Learning Objectives for SHOs: Royal College of Psychiatrists; 2002 (October 2002).

Royal College of Psychiatrists. A competency-based curriculum leading to the Certificate of Completion of Training: Royal College of Psychiatrists; 2003 (June 2003).

Royal College of Psychiatrists. A competency-based curriculum leading to the Certificate of Completion of Training - Specialist competencies: Old Age Psychiatry: Royal College of Psychiatrists; 2003 (June 2003).

Journals checked for pronouncements on training or service delivery

A&E medicine

Emergency Medicine (EMJ)

Anaesthetics

Anaesthesia

British Journal of Anaesthesia

Medical specialties

Age and Ageing

British Journal of Dermatology

Clinical Endocrinology

Clinical Medicine/Journal of the Royal College of Physicians of London

Gut

Heart

Rheumatology

Thorax

Surgical specialties

Annals of the Royal College of Surgeons of England

Bulletin of the RCS of England

Journal of Bone and Joint Surgery

Journal of Laryngology and Otology

Urology

Obstetrics and gynaecology

British Journal of Obstetrics & Gynaecology

Ophthalmology

British Journal of Ophthalmology

Eye (Royal College of Ophthalmology Journal)

Paediatrics

Archives of Diseases in Childhood

Psychiatry

Advances in Psychiatric Treatment

British Journal of Psychiatry

Psychiatric Bulletin

Hospital training for general practice

British Journal of General Practice

Appendix 5 Annex C: Specialty reviews

- A&E medicine
- Anaesthetics
- General medicine and medical specialties
  - Cardiology
  - Dermatology
  - Endocrinology and diabetes
  - Gastroenterology
  - Renal medicine
  - Respiratory medicine
- General surgery and surgical specialties
- Trauma and orthopaedics
- Urology
- Ophthalmology
- Obstetrics and gynaecology
- Paediatrics
- Psychiatry
- Specialty training for general practice

A&E medicine

A&E Doc 8: RCS: BST Manual

College / association	**Recommendations**		**Volume / concentration implications**	**Justification**
Royal College of Surgeons	**Training**	**Service**		
Title The Manual of Basic Surgical Training	A&E Departments Recommended number of consultants per new patients: 25 000–50 000: 2 consultants; 50 000–75 000: 3 consultants; 75 000–100 000: 4 consultants. For junior medical staff it is recommended that the staffing norm is one doctor per 5000 new patient attendances (56 h/week contract). The minimum number of junior doctors required to work a 24-hour rota is six.	CT scanning facilities must be available 24 h per day on site for patients with head injuries.	A&E departments For the recognition of basic surgical training posts, the advised minimum size is a department receiving 25 000 new patient attendances per annum.	No justification for the recommendations given in the document.
Year 1998, September (under revision 2003)				
Author				
Report produced by Training Board				
Aim of Report To make recommendations concerning the minimum requirements for basic surgical training recognition.				
Training recommendation Yes				
Delivery recommendation (yes/no) No				
Explicit volume/concentration implication Training (yes/no) Yes				

Service (yes/no) No				
Research-based supporting evidence (yes/no) No				

FAEM: HST A&E Medicine

A&E DOC 1

College / association **Faculty of Accident & Emergency Medicine**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Year 2003, February	It is recognised that the specialist in A&E Medicine needs to have an unusually wide knowledge of the practice of many other related specialties. To achieve this, the training programme must provide for approximately one quarter of the trainee's time being spent on full-time working attachments of at least 3 months duration in the following specialties: - General Paediatrics - General Medicine (including Cardiology) - Anaesthesia with experience of Intensive Care - Trauma and Orthopaedic Surgery - General Surgery and/or Plastic Surgery, Neurosurgery, Cardiothoracic Surgery To provide good training and experience in Paediatric A&E Medicine: - suitable departments will usually be ones where at least 18 000 new child patients are seen each year. In approving a general A&E Dept for Paediatric A&E Medicine training, the JCHTA&E should seek to ensure that a wide range of paediatric problems, medical as well as traumatic, is seen; - the Dept must have adequate physical facilities for	A suitable A&E dept providing Paediatric A&E Medicine training will usually be one where at least 18 000 new child patients are seen each year.	No justification for the recommendations given in the document.
Title Higher Specialist Training Accident & Emergency Medicine			
Report produced by Higher Training Committee			
Aim of report Provides overview of requirements and recommendations for higher specialist training in A&E Medicine			
Training recommendation Yes			
Delivery recommendation No			

Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No	the care of children with minor as well as major acute problems; - All departments approved for Paediatric A&E Medicine HST must be in hospitals where there are Paediatric inpatient facilities on the same site as the A&E Dept.			
Research-based supporting evidence (yes/no) No				

FAEM Educational Recognition of Posts in A&E Medicine - HST

A&E DOC 2

College / association **Faculty of A&E Medicine**	**Recommendations**		**Volume / concentration implications**	**Justification**
	Training	**Training**		
Title Educational Recognition of Posts in A&E Medicine – Higher Specialist Training	Workload and staffing - Total new patients must exceed 25 000 per year and department must offer care throughout 24 h; - For a department to be considered for training in paediatric A&E Medicine as a sub-specialty, an adequate number of child patients must be cared for annually. Usually this will be a minimum of 18 000 children (new patients up to the age of 16 years) Environment and equipment - Dedicated and fully equipped resuscitation area; - areas of adequate size and equipment for safe care of patients with less serious conditions;	Readily accessible specialties (though not necessarily on site): Psychiatry, Gynaecology and Obstetrics, ENT, Ophthalmology, Care of the Elderly, Neurosurgery and Neurology, Cardiothoracic Surgery, Oral and Maxillofacial Surgery, Plastic Surgery and Burns Care, Genito-Urinary Medicine, Urology, Vascular Surgery. Supervision of Trainee in post In A&E Depts caring for adult patients (or adults and children) there must be at least 2 consultants for new SpR training posts to be recognised. In larger depts (caring for 50 000	For an A&E department to be accorded training recognition, total new patients must exceed 25 000 per year. For a department to be considered for training in paediatric A&E Medicine as a sub-specialty, a minimum of 18 000 child patients must be cared for annually. In larger depts	No justification for the recommendations given in the document.
Year 2003, February				
Author Jonathan Marrow				
Report produced by JCHTAA&E				
Aim of Report Guidance to the criteria the Higher Training Committee of the Faculty of A&E Medicine will apply when assessing A&E				

depts for educational recognition of higher SpR training posts. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) Yes (3 references given)	- room equipped for specialised examinations (e.g. eyes and ENT); - safe interview room for mentally disturbed patients; - practical system in operation for rapid availability of appropriately experienced support in cases of major trauma and in cardiac emergencies. Supporting services accessible on site Acute general medicine, acute general surgery (with major operating theatre available 24 h), Trauma and orthopaedics, Anaesthetics, Intensive care, Coronary care, X-ray, CT and ultrasound throughout 24 h, Pathology (including haematology, Chem Path and access to Blood transfusion products throughout 24 h), Paediatrics (if acutely ill or injured children are to be received).	new patients or more per year) there should be at lest one consultant for every two specialist registrars. An A&E consultant, with commitment to training, must be identified to supervise each SpR. Because of shortage of appropriately qualified consultant, specialist Paediatric depts may at present be recognised with only one consultant in post. For a general dept to recognised for sub-specialty training in Paediatric A&E Medicine there must be a recognised consultant trainer in Paediatric A&E Medicine. A SpR in A&E Medicine (including Paediatric A&E Medicine) must be able to contact a consultant in A&E Medicine (or Paediatric A&E Medicine) for advice whenever they are on duty (including on call). For at least 50% of the SpR's shifts of duty, a consultant should also be on duty in the department.	(caring for 50 000 new patients or more per year) there should be at least one consultant for every two specialist registrars.	

BAEM: The Way Ahead

A&E DOC 5

College / association	**Recommendations**		**Volume / concentration implications**	**Justification**
British Association for A&E Medicine	**Service delivery**	**Service delivery**		
Title The Way Ahead 1998	For hospitals with new patient attendances of greater than 30 000	Six SHOs working 40 shopfloor hours per week		"Most A&E depts are facing an

Year 1998, October	per annum: the following should be available on site: intensive care, anaesthetics, acute medicine, general surgery, orthopaedic trauma. There should be rapid easy access to child health, 24-h access to imaging and laboratory services available on site. Where these supporting services are absent or withdrawn, the A&E service will not be recognised for training. For smaller DGHs, seeing less than 30 000 new patients per annum: such units should be staffed in the same way as those seeing 30 000 or more patients. However, such depts would not be able to support the training of SHOs or SpRs. All A&E depts should have on-site cover by doctors more experienced than SHOs for as much of the week as possible. In general, medium-sized depts should aim to have at least 16 h a day of middle-grade on-site cover; large depts should aim to have 24-h on-site middle-grade cover.	are the minimum required to cover a full shift pattern to cover 24 h. An SHO scheduled for 40 h of shopfloor work per week may attend to 3500 patients per annum although this depends entirely on the case-mix of the patient workload. Recommended minimum staffing level of A&E depts based upon number of new and return patients: 30 000–50 000: 3 consultants (9–14 service equivalents); 55 000–75 000: 4 consultants (16–21 service equivalents); 80 000–95 000: 5 consultants (23–27 service equivalents); 100 000: 6 consultants (29 service equivalents). NB: Service equivalents include SHO, SpR and Staff Grade posts.		inexorable rise in new patient attendances…The increased demand has not been matched by increased resources and the recruitment of medical staff has been a particular problem. Faced with increasing demand and limited resources it is proper that A&E depts should seek to define their core activity to ensure that their limited resources are deployed in the most clinically appropriate and cost-effective way." (pp. 2–3)
Author				
Report produced by Working Party				
Aim of report To make recommendations to enable the service to meet the emergency needs of A&E for the future.				
Training recommendation No				
Delivery recommendation (yes/no) Yes				
Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No				
Research-based supporting evidence (yes/no) No				

Anaesthetics

RCA: CCST in Anaesthesia II

ANA DOC 2

College / association **Royal College of Anaesthetists**	Training recommendations	Volume / concentration implications	Justification
Title The CCST in Anaesthesia II: Competency Based Senior House Officer Training and Assessment	Minimum time spent in SHO grade will comprise 21 months in anaesthesia+3 months in Intensive Care Medicine. Assessment should be completed after approx. 3 months of full-time training, *but exact timing will need to be determined on an individual basis.* Every SHO should receive an annual appraisal. After 9 months as an SHO, trainees should have a review which considers their suitability to progress within the specialty. After 21–24 months there should be a review to determine whether the objectives of SHO training have been or are likely to be met. Prediction of a satisfactory outcome allows a trainee to apply for a SpR post. The *SHO Training Certificate* must be completed before an SHO can take up an SpR post. Emphasis when confirming satisfactory completion of SHO training is on competence, not time. Two years SHO training is a minimum not maximum requirement. Initial Assessment of Competency is designed to demonstrate possession of basic key components of knowledge, skills+attitudes necessary to progress in the specialty. Trainee cannot progress beyond direct supervision without Initial Assessment of Competency. Initial assessment should comprise recorded consensus view of the trainers who have supervised the trainee including a workplace assessment covering:		No justification for the recommendations given in the document.
Year 2003, April			
Author			
Report produced by RCA Training Committee			
Aim of report The second in a series of four training guides describing the programme of training leading to a CCST in anaesthesia.			
Training recommendation Yes			
Delivery recommendation (yes/no) No			

Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No	- preoperative assessment; - general anaesthesia for ASA I or II patients; - general anaesthesia with spontaneous respiration; - general anaesthesia with endotracheal intubation; - rapid sequence induction+failed intubation routine; - CPR skills; and - clinical judgement, attitudes and behaviour.		
Research-based supporting evidence (yes/no) No	After satisfactory assessment trainees may begin to undertake uncomplicated general anaesthesia cases and peripheral nerve blocks delegated to them, without direct supervision and may be given increased clinical responsibility. To complete SHO training successfully, the trainee must satisfactorily complete specified workplace assessments+pass the RCA Primary Exam. These assessments involve being able to demonstrate various procedures to the satisfaction of the trainers (more details of these procedures on p.12 of document).		

RCA: CCST in Anaesthesia III

ANA DOC 3 *cont*.

College / association **Royal College of Anaesthetists**	**Recommendations (training)**	**Volume / concentration implications**	**Justification**
Title The CCST in Anaesthesia III: Competency Based Specialist Registrar Years 1 and 2 Training and Assessment Year 2003, April Report produced by	Assessment of SpR 1/2s will be done in the workplace+by RCA exams. Workplace assessments will concentrate primarily on clinical skills, attitudes+behaviour together with a confirmation that the trainee has a practical understanding of the knowledge base across anaesthesia, critical care+pain management. Examination assessments will mainly test the knowledge base across anaesthesia, critical care+pain management with the associated applied basic science. It is intended that trainees should receive an initial exposure to anaesthetic practice in all these fields. The seven 'Key Units of Training'	Within Obstetric anaesthesia sub-specialty – training should normally be provided in units carrying at least 2000	No justification for the recommendations given in the document

RCA Training Committee Aim of report Third volume in a series of four training guides which describe the programme of training leading to a CCST in anaesthesia. Training recommendation Yes Delivery recommendation No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	are: - Cardiac/Throacic anaesthesia - Intensive Care Medicine - Neuroanaesthesia - Obstetric anaesthesia - Paediatric anaesthesia - Pain management - Vascular anaesthesia There are five 'Additional Units of Training' which may or may not be available depending on the distribution+availability of services locally. It would be expected that SpR 1/2 trainees will receive training in at least some of these sub-specialties and, on occasion, one or more specialist units of training could be linked together: - Diagnostic imaging, anaesthesia+sedation - Maxillo-facial/Dental - Ophthalmic surgery - Plastics/Burns - Miscellaneous There will be overlap in training over sub-specialties. It is for local trainers and schools to determine, within the constraints of local sub-specialty arrangements, what is the appropriate balance. However, there a no. of 'Fundamental Transferable Skills' in which all trainees will need to obtain competency. At the end of their SpR 1/2 training, to be able to move on to a SpR 3/4/5 post, the trainee must have obtained *The SpR 1/2 Training Certificate* which requires: - passing all the required Workplace assessments; - demonstrating acceptable attitudes+behaviour; and - passing the RCA Final Exam or Final exam of the College of Anaesthetists RCSI. There are also six 'General Units of Training' which are widely available, in which it would be expected that all SpR 1/2 trainees will receive appropriate training+in which workplace assessments will take place:	deliveries annually. There should be at least 1 consultant anaesthetic session allocated for every 500 deliveries

	- Day surgery - ENT - General surgery/Gynaecology/Urology (+/- Transplantation) - Orthopaedic anaesthesia - Regional anaesthesia - Trauma and accidents Schools of Anaesthesia may experience difficulties in providing training in some sub-specialty areas. Therefore, the College will produce some teaching materials i.e. CD-ROMs to assist local teaching. 'Fast-track' trainees may progress to cover aspects of training which others, progressing more steadily, will not be capable of covering until they enter SpR 3/4/5 training.		

RCA: CCST in Anaesthesia IV

ANA DOC 4

College / association **Royal College of Anaesthetists**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title The CCST in Anaesthesia IV: Competency based Specialist Registrar Years 3, 4 and 5 Training and Assessment Year April 2003 Author Report produced by RCA Training Committee Aim of report	During this period: Every trainee must complete the full 3 years of SpR 3/4/5 training; at least 2 of the 3 years must be spent in approved training or research posts in the UK; up to 1 year can be taken as full time dedicated work in a single sub-specialty; up to 1 year can be taken outside the UK as either clinical training or research; only 1 year of full time research can be counted towards the CCST; during the 3 years trainees should normally undertake an aggregate of 12 months (all trainees must undertake a minimum of 6 months of this type of training) 'general duties' where they have increased autonomy for their own work. A minimum caseload is included for most sub-	For training at advanced level in Cardiac/thoracic anaesthesia: recommended training caseload is 100 for Cardiac and 50 for thoracic (minimum). It is unlikely that competence could be maintained with less than an average of one theatre session a week. Minimum caseloads for Neuroanaesthesia: 20 patients for immediate management of head injury; 10 patients for shunt procedures;	No justification for the recommendations given in the document.

The fourth, and final, volume in a series of four training guides which describe the programme of training leading to a CCST in anaesthesia Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	specialties. It is recognised that the programme is competency based but also that a certain minimum caseload is required to assess competence. Clearly different trainees will become competent with varying nos of cases; however a guideline has been widely requested for the purpose of sub-specialty training. It is recognised that on entry to years 3, 4 and 5 of training, and in gaining the broader competencies required for a consultant post, a more flexible approach than for SHO and SpR 1/2 years is necessary. This 3-year period should be regarded as a continuum allowing trainees to rotate between district general and central hospitals to provide them with the appropriate experience. Trainees must be allowed to some degree to follow their own differing paths of training. The aim of training in years 3/4/5 is to produce trainees competent for *Independent Professional Practice* in the chosen consultant post. There is not one standard model of training for these years – some broad criteria is set to ensure that training has an appropriate balance.	20 patients for major spinal surgery; 5 patients for carotid endarterectomy; 25 patients for intracranial surgery; 5 patients for posterior fossa surgery; 5 patients for stereotactic surgery; 15 patients for neuroradiological imaging. For obstetrics: during the specialist training period the trainee should have performed o personally supervised at least: 150 regional procedures for labour analgesia; and 100 regional anaesthetics for Caeserean section. By the end of SpR training the trainee will be expected to have performed at least 10 general anaesthetics in obstetric patients. For advanced training in paediatric anaesthesia: the trainee normally should have performed during a 6-month period a minimum of 300 elective and emergency cases, including: 100 cases aged 1–5 years; and 50 cases <1 year old, incl. neonates.

RCA: Guidelines for Provision of Anaesthetic Services

ANA DOC 5

College / association	Recommendations	Volume / concentration implications	Justification
Royal College of			

	Training	**Service delivery**		
Title Guidelines for the Provision of Anaesthetic Services Year 1999, July Author Report produced by Royal College of Anaesthetists Aim of report To provide comprehensive guidance to both purchasers and providers of anaesthetic services. Training recommendation Yes Delivery recommendation (yes/no) Yes	For Obstetric Anaesthesia: Trainees should have completed one year of anaesthetic training and have been assessed by a consultant anaesthetist with responsibility for obstetric anaesthetic services before undertaking obstetric anaesthesia care other than with direct experienced supervision.	During office hours the consultant on call will have no other responsibilities. The no. of daytime sessions necessary to provide adequate consultant availability will be dependent upon local workload but may exceed 15 in large busy units. The cardiac arrest team must include an anaesthetist. An anaesthetist should also be available for resuscitation of seriously ill and severely injured patients. Both should be available on a 24-h basis. Anaesthesia for day surgery should be a consultant-based service. The majority of sessions should have allotted to them a regular consultant anaesthetist who is skilled in day surgery work. Non-consultant career grades, such as clinical assistants and staff grade doctors may provide anaesthesia for day surgery. They require supervision by consultant anaesthetists. Each Consultant Obstetric unit must have a consultant anaesthetist with responsibility for obstetric services. A Neuroanaesthesia service requires adequate consultant sessional provision and the immediate availability of a resident anaesthetist for 24 h a day. Senior assistance should be available	For Paediatric anaesthesia, a suitably trained, nominated consultant should be available. If not, arrangements will be made for the transfer of children to another hospital with the necessary staff and facilities. For non acute pain services, a minimum of ten consultant sessions per week should be provided for a population of 100 000, ideally these sessions being shared between two consultants for continuity of cover. Within Obstetrics sub-specialty: the no. of consultant sessions shared with other anaesthetic colleagues should follow guidelines based on the annual no. of deliveries and procedures carried out. A minimum of one consultant session per	Yes (*Further Reading* References provided

Explicit volume/concentration implication Training (yes/no) No Service (yes/no) Yes		within 30 minutes. Each cardiac unit must have a consultant anaesthetist with dedicated responsibility for cardiac anaesthetic services. A nominated member of the consultant anaesthetic staff must be responsible for ophthalmic services.	500 deliveries is recommended.
Research-based supporting evidence (yes/no) Yes (*Further Reading* references provided)			

RCA: Guidelines on provision of paediatric anaesthetic services

ANA DOC 6

College / association **Royal College of Anaesthetists**	Recommendations		Volume / concentration implications	Justification
	Training	**Service delivery / staffing requirements**		
Title Guidelines on the provision of paediatric anaesthetic services	Children who undergo anaesthesia must be managed by staff who have received appropriate training in paediatric anaesthesia and resuscitation. Staff must receive regular retraining in paediatric life support. Consultants appointed to posts in specialist paediatric units should have obtained at least 1 year or equivalent of full-time specialist training in paediatric anaesthesia in a specialist paediatric unit (started in years 3–5 of the SpR training programme). Consultants in paediatric anaesthesia at DGHs typically undertake at least one paediatric list or equivalent per week. It is recommended that they have at least 6 months or equivalent of full-time specialist training in paediatric anaesthesia in a specialist paediatric unit	All children should be anaesthetised by a consultant or other career-grade anaesthetist who has regular relevant paediatric practice. Supervision will vary according to ability and experience of the trainee and the nature of the case. An SHO with <6 months experience requires direct supervision in theatre whilst an experienced SpR who has undergone a recent period of paediatric anaesthetic higher specialist training might be supervised by a consultant outside the hospital theatre suite.	Where appropriate, trusts should consider joint appointments with regional paediatric hospitals to allow designated consultants from DGHs a regular paediatric commitment within a dedicated hospital environment in order to maintain and develop their skills.	
Year 2001, July				
Author				
Report produced by RCA Working Group				
Aim of report See Title				
Training recommendation Yes				
Delivery recommendation (yes/no) No				

Explicit volume/concentration implication	
Training (yes/no)	
No	
Service (yes/no)	
No	
Research-based supporting evidence (yes/no)	
Yes (*Further Reading* references provided)	

AAGBI: Guidelines for Obstetric Anaesthesia Services

ANA DOC7

College / association	Recommendations		Volume / concentration implications	Justification
The Association of Anaesthetists of Great Britain and Ireland / The Obstetric Anaesthetists Association	**Training**	**Service delivery**		
Title Guidelines for Obstetric Anaesthesia Services Year 1998, September Author Report produced by Working Party	The anaesthesia service is required to provide: a training programme for trainee anaesthetists. Opportunities for appropriate continuing medical education for non-trainee grades contributing to the obstetric anaesthetic service.	Each obstetric unit with anaesthesia service should have a nominated consultant in charge of obstetric anaesthesia. In addition to the contracted consultant obstetric anaesthesia	At least one consultant obstetric anaesthesia session should be allocated for every 500 deliveries. Extra 'fixed' sessions above this minimum are required in units with a frequent turnover of inexperienced trainees, with a higher than average epidural or Caesarean section rate and/or a substantial no. of high-risk cases. Women delivering in smaller units	Ratio first recommended by House of Commons Social Services Committee in its Second Report of 1979/80 (p.9 in document).

Aim of report This report updates on two reports produced in 1987 and 1995 outlining proposals for improving quality and safety of obstetric anaesthesia in the UK. Training recommendation Yes Delivery recommendation (yes/no) Yes Explicit volume/concentration implication Training (yes/no) No Service (yes/no) Yes Research-based supporting evidence (yes/no) Yes	If the duty anaesthetist is a trainee, they should have been assessed as competent by the consultant in charge of obstetric anaesthesia and have at least 1 year's anaesthesia experience before undertaking independent clinical duties on the delivery suite.	sessions, an obstetric unit with an anaesthesia service should have a consultant anaesthetist on call and responsible for the unit at all times. A duty anaesthetist should be available for the obstetric unit 24 h a day. If the duty anaesthetist is unlikely to be able to respond because of another emergency, a second anaesthetist should be available.	have a right to the same standard of [anaesthetic] care. However, in very small units (<500 deliveries per annum), provision of such care may be impractical and uneconomic. In such circumstances, women may require early transfer to a larger unit offering a comprehensive anaesthesia service. For optimal patient levels of patient care there should be a designated consultant anaesthetist available in the obstetric unit during normal working hours. In smaller units, the workload may not justify this level of staffing, thus highlighting the need to rationalise obstetric services by closing smaller units.	

AAGBI: Provision of Pain Services

ANA DOC 8

College / association	Recommendations		Volume / concentration implications	Justification
Association of Anaesthetists of GB & Ireland	**Training**	**Service delivery**		

Title Provision of Pain Services Year 1997, September Author Report produced by Working party Aim of report To give information to purchasers and providers regarding good quality pain management. Training recommendation No Delivery recommendation (yes/no) Yes Explicit volume/concentration implication Training (yes/no) No Service (yes/no) Yes Research-based supporting evidence (yes/no) Yes (References provided)		Medical personnel should have an appropriate allocation of fixed sessions.	Provision of consultant sessions should be based on population and it has been recommended that a minimum of one whole time equivalent consultant dedicated to chronic pain management is necessary for each 100 000 population. Consultant contracts with specialist involvement should include a minimum of three sessions.	(References provided)

General medicine and medical specialties: cardiology, dermatology, endocrinology and diabetes, gastroenterology, renal medicine and respiratory medicine

RCP: GPT - Handbook

RCP DOC 1

College / association	Recommendations		Volume / concentration implications	Justification
Royal College of Physicians	**Training**	**Training**		
Title GPT: Handbook Year 2000, March Author Report produced by Royal College of Physicians Aim of report To provide a broad outline of the requirements for postgraduate General Professional Training (GPT) within SHO posts. Training recommendation Yes	General professional Training encompasses: - a minimum of 2 years in GPT-approved posts; - 18 months of the 2 years must be spent in posts providing experience in the admission and early follow-up of acute emergencies; - at least 6 of these 18 months must be spent on a service or services on which the emergency take is 'unselected'; - 'unselected take' is defined as acute medical intake encompassing the broad generality of medicine i.e. not restricted to any single or small group of specialties;	No individual SHO should normally be responsible for more than 25 acute inpatients or less than 10 at any time. SHOs in the acute specialties should be on emergency take not less than once in 7 days with an average of at least 10 admissions in a 24-h period. More than 15–20 admissions may place an intolerable strain on the SHO. <u>Educational arrangements</u> All trainees should have experience in busy hospitals where general medicine and general surgery are practiced and		"GPT is intended to provide experience in a wide range of specialties in order to assist SHOs with the choice of a future career…" (p. 2)

Delivery recommendation (yes/no) No				
Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No				
Research-based supporting evidence (yes/no) No				

JCHMT: HMT Curriculum for General (Internal) Medicine

HMT DOC 7

College / association **Joint Committee on Higher Medical Training**	**Recommendations** **Training**	**Service delivery**	**Volume / concentration implications**	**Justification**
Title Higher Medical Training Curriculum for General (Internal) Medicine Year 2003, January Author	The trainee should be responsible for not less than 10 inpatients and should undertake at least one outpatient clinic per week, which must include a proportion of general medical patients and the ward follow-up clinic. Up to 1 year of training in GIM may be in suitable posts in Geriatric Medicine where it is		10 is the minimum number of inpatients per SpR.	No justification for the recommendations given in the document.

Report produced by Specialist Advisory Committee
Aim of report Competency-based curriculum, set out to define the learning needs of trainee physicians in General (Internal) Medicine.
Training recommendation Yes
Delivery recommendation (yes/no) No
Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No
Research-based supporting evidence (yes/no) No

RCP: Consultant Physicians Working for Patients

RCP DOC 3

College / association **Royal College of Physicians**	**Recommendations (service delivery)**	**Volume / concentration implications**	**Justification**
Title Consultant Physicians Working for	General Internal Medicine Over a 24-h period the consultant and medical team (at least	The specialist facilities and staffing required to	No justification for the

Patients: The duties, responsibilities and practice of physicians Year 2001, November Report produced by Royal College of Physicians Aim of report Sets out the views of the College on the conditions necessary for effective safe practice of internal medicine and its specialties in hospitals in the UK. Training recommendation No Delivery recommendation (yes/no) Yes Explicit Volume/concentration implications Training (yes/no) No	three resident staff) should not be expected to take responsibility for more than 20–25 acutely ill patients <u>Cardiology</u> No more than 20 inpatients should be under the care of a consultant cardiologist. The number of patients seen in conventional outpatient clinics would normally be 5 or 6 new patients or 12 to 15 review patients. Implementation of the National Service Framework for CHD requires 1 consultant per 50 000 population. <u>Diabetes & Endocrinology</u> There must be access to sophisticated imaging techniques, and to hormonal and biochemical investigations. The total requirement per 250 000 population is 4 consultants (working 38.5 h per week). <u>Geriatric Medicine/Care of the Elderly</u> A consultant should not normally be expected to care for more than 20 acutely ill assessment patients at any one time. The minimum recommendation for the adequate provision of core services is 1 consultant per 4000 of the population aged 75 or over. <u>Renal Medicine</u> The specialist facilities and staffing required to support a renal medicine service can usually only be justified in hospitals that service a large population. One consultant nephrologist per 117 000 is required to provide an adequate service. There should be one large renal unit for a 600 000 population, ideally with outreach clinics serving smaller hospitals. <u>Respiratory Medicine</u> Each consultant team should have no more than 20 to 25 inpatients under their care. Delivery of a quality service in respiratory medicine would require 5 wte consultants per 250 000 population.	support a renal medicine service can usually only be justified in hospitals that service a large population. *See under each specialty heading*	recommendations given in the document.

Service (yes/no)	Gastroenterology
Yes	Specialised facilities include a diagnostic and therapeutic endoscopy unit, facilities for parentral nutrition. There must be arrangements to support close collaboration with colleagues in oncology.
Research-based supporting evidence (yes/no)	A consultant-led team should look after no more than 20–25 inpatients at any time.
Yes	A DGH serving a population of 250 000 should see at least 4100 new GI patients each year.
	The requirement for upper GI endoscopy in the general population is 1.5:100 population per annum.
	Dermatology
	Hospitals serving a population of 250 000 need at least three consultant dermatologists with appropriate support staff.
	Dermatology patients require access to other hospital specialties, including histopathology with specific expertise in dermatopathology, plastic surgery, radiotherapy, immunology, and psychiatry.
	Two dedicated dermatological beds per 100 000 population are the min. requirement, but eight beds are the min. required to support appropriate staffing for a self-contained unit.
	Neurology
	There should be at least one wte consultant neurologist for every 100 000 population.
	All consultant neurologists should have ready access to following facilities and services: Neurosurgery, Neurophysiology, Neuroradiology, Neuropathology, Neuropsychology and Rehabilitation services.
	Rheumatology
	A hospital catchment population of 250 000 requires the services of three wte consultant rheumatologists, or about 1 per 85 000 population.
	All Rheumatology depts must have access to radiology facilities (including MRI) and ultrasound.

5th Report on the provision of services for patients with heart Disease

HMT DOC 12

College / association	Recommendations (service delivery)	Volume / concentration implications	Justification
British Cardiac Society / Royal College of Physicians / Royal College of Surgeons			
Title Fifth report on the provision of services for patients with heart disease Year 2002 Author Report produced by Joint Cardiology Committee Aim of report To make recommendations concerning the provision and configuration of services for patients with heart disease. Training recommendation No Delivery recommendation (yes/no) Yes Explicit volume/concentration implication Training (yes/no)	<u>The DGH</u> DGHs will need to have at least five consultant cardiologists to be able to provide proper rotas and comply with EWTD. Tertiary centres will need at least twice as many. The NSF for CHD has proposed targets for revascularisation procedures of at least 750 percutaneous interventions, and at least 750 CABG operations per million population per year. A total of 550 pacemaker implants should be planned per million population per year. One diagnostic cardiac catheterisation and angiography laboratory required per 450 000–600 000 population; and one pacemaker and defibrillator implantation laboratory per 1.4–1.6 million. <u>Paediatric Cardiology</u> See third column. <u>Tertiary Cardiac Services</u> For a catchment area of 1.5–2.5 million, each tertiary centre should currently be performing 1200–2500 open heart operations. Each centre should have at least 5–6 consultant interventional cardiologists, 2–3 electrophysiologists, and 1–2 consultants with responsibility for non-invasive services.	<u>The DGH</u> It is proposed that there should be more than one whole time consultant cardiologist per 50 000 population. The cardiac care unit requires four beds per 100 000 population. <u>Tertiary cardiology</u> See previous column <u>Cardiac surgery</u> For a catchment area of 1.5–2.5 million, each tertiary centre should currently be performing 1200–2500 open heart operations. A cardiac surgical unit should perform between 1200 and 2500 open heart cases per annum. <u>Paediatric Cardiology</u> Recommended target level of one paediatric cardiologist per 500 000 of the population.	NSF for CHD and other Refs.

No Service (yes/no) Yes	Each tertiary centre should have 6–8 consultant cardiac surgeons, each performing 200 cardiac operations per year. Cardiac Surgery The average cardiac surgical unit needs at least six cardiac surgeons in order to provide a 1:4 on call rota.			
Research-based supporting evidence (yes/no) Yes				

JCHMT: HMT Curriculum for Cardiology

HMT DOC 2

College / association **Joint Committee on Higher Medical Training**	**Recommendations** **Training**	**Service delivery**	**Volume / concentration implications**	**Justification**
Title Higher Medical Training Curriculum for Cardiology	For advanced training in Interventional Cardiology (which usually takes place during final 2 years of training programme): Training should take place in institution with at least two experienced interventional consultant cardiologists each of whose annual procedure volume is a min. of 125 procedures per year. The training centre should perform a minimum of 400 PCI procedures per year and, ideally, be an integral component of a comprehensive service that		To provide advanced training in Interventional Cardiology, the training centre should perform a minimum of 400 PCI procedures per year and, ideally, be an integral component of a comprehensive service that includes on-site cardiac surgery.	No justification for the recommendations given in the document.
Year 2003, April				
Author				
Report produced by Specialist Advisory Committee				
Aim of report Document setting out the curriculum for the 6 years of specialist training in cardiology.				

Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	includes on-site cardiac surgery. For guidance, it is recommended that trainees perform a min. of 200 interventions during the two years and, of these, a min. of 125 should be as first operator.			

JCHMT: HMT Curriculum for Dermatology

HMT DOC 9

College / association **Joint Committee on Higher Medical Training**	**Recommendations**		**Volume / concentration implications**	**Justification**
	Training	**Service delivery**		
Title Higher Medical Training Curriculum for Dermatology Year 2003, February Author	During the first year the trainee must do at least three general dermatology outpatient clinics per week. For at least 2 of the remaining 3 years, the trainee must do a minimum of three general dermatology clinics weekly. All trainees must have a non-resident on-call commitment for dermatology			No justification for the recommendations given in the document.

Report produced by Specialist Advisory Committee	for the first, and for at least two of the remaining yeas of HMT. This commitment should normally not be less than a 1:7 rota.
Aim of report Competency-based curriculum, set out to define the learning needs of trainee physicians in Dermatology.	
Training recommendation Yes	
Delivery recommendation (yes/no) No	
Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No	
Research-based supporting evidence (yes/no) No	

JCHMT: HMT Curriculum for Endocrinology & Diabetes Mellitus

HMT DOC 3

College / association **Joint Committee on Higher Medical Training**	Recommendations (training)	Volume / concentration implications	Justification
Title Higher Medical Training Curriculum for Endocrinology & Diabetes Mellitus Year 2003, January Author Report produced by Specialist Advisory Committee Aim of report Document written as a competency-based curriculum, which sets out to define the learning needs of trainee physicians in Diabetes and Endocrinology. Training recommendation Yes Delivery recommendation (yes/no) No	In order to achieve competence in various areas relating to Diabetes & Endocrinology, it is suggested the trainee gain experience in the following settings: Outpatient - Diabetes new and follow up clinics - Specialist diabetes clinics for renal disease, eye disease, foot problems - Multi-disciplinary nurse/dietician education sessions - Lipid management clinics - General endocrine, new and follow-up clinics - Multidisciplinary working with a thyroid surgeon and cytopathologist, and with a pituitary neurosurgeon, neuroradiologist and radiotherapist where available - Paediatric and adolescent diabetes and endocrine clinics, including growth clinics - Metabolic bone disease clinics - Medical obstetric joint clinics - Gynaecological endocrine clinics, including joint working with a gynaecologist and managing infertility Inpatient - General medical service providing consultative		No justification for the recommendations given in the document.

Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No	advice on diabetes and endocrine disease - Hospital providing secondary/tertiary services including: Vascular surgery, Renal dialysis, pituitary surgery, Adrenal surgery, Thyroid and parathyroid surgery. Evidence of competence (for Training Record) has yet to be agreed. It may include a required number of case analyses e.g. of Patient with type I diabetes, Macrovascular emergency etc.			
Research-based supporting evidence (yes/no) No				

JCHMT: HMT Curriculum for Gastroenterology

HMT DOC 4

College / association **Joint Committee on Higher Medical Training**	**Recommendations**		**Volume / concentration implications**	**Justification**
	Training	**Service delivery**		
Title Higher Medical Training Curriculum for Gastroenterology Year 2003, January Author Report produced by SAC on Gastroenterology and British Society of Gastroenterology Training Committee	<u>Training requirements</u> There must be regular and close liaison with gastrointestinal surgeons in the joint management of patients and links with interested radiologists, histopathologists and nutrition depts. Trainees must always have access to other pathological disciplines, including haematology, microbiology and clinical chemistry. All training posts must offer these facilities.			No justification for the recommendations given in the document.

Aim of report Curriculum outlining the training required to enable a doctor to have the necessary skills to participate at Consultant level in a general Gastroenterology service.
Training recommendation Yes
Delivery recommendation (yes/no) No
Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No
Research-based supporting evidence (yes/no) No

JCHMT: HMT Curriculum for Renal Medicine

HMT DOC 5

College / association **Joint Committee on Higher Medical Training**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Higher Medical Training Curriculum for Renal Medicine	A min. of 2 years must be spent in training centres fulfilling the following requirements: - at least three consultants, each practising	Training centres – 3 consultants each with 5 renal sessions weekly;	No justification for the recommendations given in the document.

Year 2003, January	renal medicine for at least five sessions a week - facilities for treatment of acute renal failure and offering experience of the management of patients with multi-organ failure in ICUs - provision of renal replacement therapy including haemodialysis and CAPD - weekly renal clinics for non-dialysis patients - full diagnostic facilities including ultrasound, CT scan, MRI scan, angiography, radionucleide investigation and renal biopsy - full laboratory service for diagnosis and management of renal patients including medical biochemistry, haematology, microbiology and histology. The balance of the training in clinical Renal Medicine may be in units where these facilities may not be available. However such a centre must have a minimum of two consultants each practising at least five sessions in renal medicine per week.	DGHs – 2 consultants each with 5 renal sessions weekly
Author		
Report produced by Specialist Advisory Committee		
Aim of report Competency-based curriculum, set out to define the learning needs of trainee physicians in Renal Medicine.		
Training recommendation Yes		
Delivery recommendation (yes/no) No		
Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No		
Research-based supporting evidence (yes/no) No		

JCHMT: HMT Curriculum for Respiratory Medicine

HMT DOC 8

College / association **Joint Committee on Higher Medical Training**	Recommendations **Training**	 **Service delivery**	**Volume / concentration implications**	**Justification**
Title Higher Medical Training Curriculum for Respiratory Medicine Year 2003, January Author Report produced by Specialist Advisory Committee Aim of report Competency-based curriculum, set out to define the learning needs of trainee physicians in Respiratory Medicine. Training recommendation Yes Delivery recommendation (yes/no) No	Training requirements for bronchoscopy: the bulk of training of bronchoscopy will be in units performing more than 200 examinations per year. Initially the trainee will be an observer and then perform 30–40 bronchoscopies under direct supervision. <u>Clinical experience</u> - the trainee should undertake at least two respiratory outpatients clinics per week during years of clinical training - all trainees must spend a minimum of 60 whole days training in ICU. Ideally this should be a full-time 3 months allocation but if it is not possible then it can be done in segments of 15 consecutive working days. - safely perform a minimum of 10 pleural biopsies - safely perform a minimum of 20 intercostals tube placements		Units with 200 or more bronchoscopies. Annually; Minimum numbers of procedures to be performed: - 10 pleural biopsies - 20 intercostal tube placements - setting up 50 CPAP and NIPPV - 30 tuberculin tests - 30 tests for common allergies.	No justification for the recommendations given in the document.

Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No	- set up patients on CPAP and NIPPV (50) - perform and read tuberculin tests (30) - perform and read skin test to common allergies (30).
Research-based supporting evidence (yes/no) No	

General surgery and surgical specialties: trauma and orthopaedics, and urology

RCS: BST Manual

College / association Royal College of Surgeons	Recommendations (training)	Volume / concentration implications	Justification
Title The Manual of Basic Surgical Training Year 1998, September (under revision 2003) Author Report produced by Training Board Aim of report To make recommendations concerning the minimum requirements for basic surgical training recognition. Training recommendation Yes Delivery recommendation (yes/no) No	All hospitals with basic surgical trainees should ideally serve a population which is sufficiently large to justify the concentration of manpower and the range of surgical and medical skills and to provide the quantity and quality of experience necessary. A ratio of a maximum of one consultant to one basic surgical trainee is appropriate for all specialties, except A&E. CT Scanning facilities must be available 24 h per day on site for patients with head injuries. <u>A&E Departments</u> Recommended number of consultants per new patients: 25 000–50 000: 2 consultants; 50 000–75 000: 3 consultants; 75 000–100 000: 4 consultants. For junior medical staff it is recommended that the staffing norm is one doctor per 5000 new patient attendances (56 h/week contract). The minimum number of junior doctors	Maximum of 1 consultant to 1 BST trainee in all specialites, except A&E. <u>A&E departments</u> For the recognition of basic surgical training posts, the advised minimum size is a department receiving 25 000 new patient attendances per annum.	No justification for the recommendations given in the document.

Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No	required to work a 24-h rota is six. <u>Hospital Facilities</u> The following specialties must, as a minimum, be available and readily accessible on site: acute general medicine, acute general surgery, trauma/orthopaedics, anaesthetics, intensive/coronary care facilities, radiology, pathology.			
Research-based supporting evidence (yes/no) No	The following specialties need not necessarily be on site but ready access is required: acute gynaecology, ENT surgery, ophthalmology, care of the elderly, neurosurgery and neurology, obstetrics, cardiothoracic surgery, oral and maxillofacial surgery, plastic surgery (and burns unit), genito-urinary medicine, other specialist surgery (e.g. vascular surgery, urology). The hospital should support an active trauma team and cardiac arrest team.			

JCHST: Manual of HST in UK & Irl.

College / association	**Recommendations**		**Volume / concentration implications**	**Justification**
Joint Committee of Higher Surgical Training	**Training**	**Service delivery**		
Title A Manual of Higher Surgical Training in the UK and Ireland Year 2003, January	Educational approval: **Ratio of consultants to middle grade staff:** 1 wte consultant: 1:1.2 middle grade staff. Within this ratio individual SACs may have a separate ratio		Consultant wte:middle-grade ratio 1:1.2 Parallel operating lists not acceptable for training.	No justification for the recommendations given in the document.

Author	for consultants: SpRs. Parallel operating lists are not acceptable for training purposes.			
Report produced by JCHST				
Aim of report Document setting out the regulations for higher surgical training in the UK and Ireland in respect of the surgical specialties relating to the JCHST.				
Training recommendation Yes				
Delivery recommendation (yes/no) No				
Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) Yes				
Research-based supporting evidence (yes/no) No				

JCHST: General Surgery Curriculum

College / association	Recommendations		Volume / concentration implications	Justification
Joint Committee for Higher Surgical Training	**Training**	**Service delivery**		
Title Curriculum, Organisation and Syllabus for Higher Surgical Training in General Surgery	Trainee/Trainer Ratios: in no circumstances may the ratio of 1.2 middle-grade staff to 1 consultant (full time equivalent) be exceeded. It is mandatory that trainees are at all times exposed to the clinical practice of at least two trainers. The minimum period of HST in General Surgery is 6 years.		Consultant wte:middle-grade ratio not to exceed 1:1.2.	No justification for the recommendations given in the document.
Year 2001, December				
Author				
Report produced by SAC				
Aim of report Document clarifying and amplifying the specific arrangements for General Surgery.				
Training recommendation Yes				
Delivery recommendation (yes/no) No				

Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No				
Research-based supporting evidence (yes/no) No				

RCS: Surgical Workforce in New NHS

College / association **Royal College of Surgeons**	Recommendations (service delivery)	Volume / concentration implications	Justification
Title The Surgical Workforce in the New NHS Year 2001, November Report produced by Working Party Aim of report Document representing the core evidence on workforce issues of the RCS and its specialty associations. Training recommendation	Acute secondary care services should be predominantly based on networks delivering care to populations of approx. 500 000. <u>General Surgery</u> The Senate of Surgery target is 1 consultant per 25 000 population. An ideal surgical team would have one SpR for every four to five consultants with one SHO and two or three PRHOs. <u>Trauma and Orthopaedic Surgery</u> Senate of Surgery target is 1 consultant per 25 000 population. It is becoming increasingly difficult to conduct elective and emergency paediatric orthopaedic surgery in a DGH setting largely because of the requirements of paediatric anaesthesia. Because of the diversity in orthopaedics, teams involving surgeons of various subspecialty interests are necessarily large and more difficult to achieve in the smaller hospital setting.	Acute secondary care services should be predominantly based on networks delivering care to populations of approx. 500 000. Population rates given for surgical sub-specialties	"Emergency surgical admissions have now risen from a rate of 3% per annum in the early 1990s to almost 30% per annum in some urban areas. At the same time, elective surgical admissions and day case admissions have risen dramatically in some specialties…To cope with these demands, more consultant surgeons are needed."(p.10)

No	For a population of 500 000 the team structure should be:
	20 consultants; 10 SpRs and 10 SHOs.
Delivery recommendation	Otolaryngology
Yes	Senate of Surgery target is 1 consultant per 75 000 population.
	Urology
Explicit volume/concentration implication	Senate of Surgery target is 1 consultant per 80 000 population.
	For a population of 500 000 the ideal team would comprise:
Training (yes/no)	Six consultants; three – four SpRs; and non-consultant career grades for non-operative roles
No	Following safe workload maxima recommendations:
Service (yes/no)	Outpatients
Yes	Consultant alone: 14–20 per clinic.
Research-based supporting evidence (yes/no)	Consultant with SpR or NCCG: 20–30 per clinic.
	Consultant with SHO or first year SpR: 25 per clinic.
No	Inpatients
	1000–1250 FCEs per year with at least 60% as day cases.

JCHST: Trauma & Orthopaedic Surgery

College / association	Recommendations		Volume / concentration implications	Justification
Joint Committee for Higher Surgical Training	**Training**	**Service delivery**		
Title The Curriculum for HST in Trauma and Orthopaedic Surgery	Approvals of Hospitals for HST For the purposes of HST in Orthopaedic Surgery, a hospital requires an assured critical mass of patients in the specialty with a case mix appropriate to the		Hospitals for higher training hospitals with trauma services should have a consultant-based	No justification for the recommendations given in the
Year 1996, November				

Author Report produced by JCHST Aim of report Provides a curriculum for trauma and orthopaedics as a supplement to the Manual of HST in the UK & Ireland. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	needs of the trainee. It is an advantage to have more than one HST in trauma and orthopaedic surgery in any training hospital. The trainee should spend no more than 2 years of the first 4 years of training at an individual hospital. Ideally, there should be a 50/50 mix between trauma and orthopaedics during the 4 years. Any training hospital which admits trauma, should have a Consultant based trauma service with a minimum of four Consultants.		service with minimum of 4 consultants	document.

BOA: Education and Training for SHOs

College / association British Orthopaedic Association	Recommendations		Volume / concentration implications	Justification
	Training	Service delivery		
Title Education and Training for SHOs A Snapshot of the Moment and Recommendations for the Future	There is a concern that an SpR and an SHO cannot be training simultaneously. This means that the ratio of trainer to		Ratio of trainer to trainee should not exceed 1.15.	No justification for the recommendations given in the

Year 2002, July Author Report produced by Academic Board of Orthopaedic Surgery Aim of report To assess the quality of education, training and experience of SHOs in trauma and orthopaedics. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) Research-based supporting evidence (yes/no) Yes (based on large survey of SHOs)	trainee should not exceed 1:1.5. The EWTD further complicates and compromises training for all surgeons. One option proposed is amalgamation of units so that a greater no. of SHOs are available to cover out-of-hours duty. Figures showed that a high population to consultant ratio led to poorer educational supervision of trainees and overall to poor provision of formal educational events, thus reinforcing the vital need for consultant expansion.			document.

JCHST: Urological Training

College / association	Recommendations		Volume / concentration implications	Justification
Joint Committee for Higher Surgical Training	**Training**	**Service delivery**		

Title Urological Training Year 2002, January Author Report produced by JCHST/SAC Aim of report To give an overview of training requirements for HST in Urology. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	HST in Urology lasts for 6 years, comprising 5 clinical years in training and one year in flexible training. On inspection, the SAC looks for: - a two-urologist unit as a minimum - a timetable involving 3 sessions in theatre, two sessions in outpatients, other sessions (haematuria clinics, urodynamics etc) - teaching sessions involving all regional trainees, and a timetable to cover the whole curriculum over 2–3 years. Training in complex urology (Years 5–6) requires the trainee to work with a urologist in a tertiary referral unit with a multi-disciplinary approach to the specialty.		Two consultant urologist staff as a minimum-sized unit for higher training.	No justification for the recommendations given in the document.

Ophthalmology

RCOPHTH: Basic Specialist Training Curriculum

OPH DOC 2

College / association **Royal College of Ophthalmologists**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Curriculum of Basic Specialist Training in Ophthalmology	For certain practical skills (e.g. cataract surgery, scatter photocoagulation, Yag laser capsulotomy), a figure is given specifying the minimum target numbers of procedures to have been performed by an SHO by the end of 2 years of Basic Specialist Training and yearly thereafter as a senior SHO. In terms of surgery for routine cataract, including extracapsular extraction and phacoemulsification with intraocular lens insertion; management of intra-operative complications (50 cataract or other intraocular procedures) and for Yag laser posterior capsulotomy (20 procedures).	See Guide for Basic Specialist Training in Ophthalmology (2000)	"Basic specialist training is intended to provide a programme of learning which facilitates the acquisition of knowledge, understanding, skills and attitudes to a level appropriate to an ophthalmic trainee who has been fully prepared to begin his/her higher specialist training as a SpR in Ophthalmology…." (p. 1)
Year 1999			
Author			
Report produced by Training Committee			
Aim of report Curriculum document establishing the training aims together with the objectives against which basic specialist training programmes and the progress of individual SHOs in ophthalmology should be assessed.			
Training recommendation Yes			
Delivery recommendation (yes/no) No			

Explicit volume/concentration implication Training (yes/no) Yes (but refer to Guide, 2000) Service (yes/no) No
Research-based supporting evidence (yes/no) No

RCOPHTH: Guide for Basic Sp.Tr. in Ophthalmology

OPH DOC 1

College / association **Royal College of Ophthalmologists**	**Recommendations (training resources)**	**Volume / concentration implications**	**Justification**
Title Guide for Basic Specialist Training in Ophthalmology Year 2000 Author Report produced by Training Committee Aim of report Guidelines providing overview of educational and training requirements in ophthalmology at SHO level (to read together with the Curriculum for BST in	Units providing a full 2-year training for SHOs should normally have a minimum of three Consultants with a major sessional commitment to the ophthalmic training centre. Units with two consultants will be recognised for SHO training for only 1 year, and such trainees must rotate externally to another unit or units for the remaining part of their training. Units with a single consultant will not be given recognition. Each training centre should have sufficient facilities and adequate patient throughput to provide appropriate experience in ophthalmic surgery and medicine. There should be a fully equipped and staffed eye theatre. A dedicated ophthalmic outpatient department is required with facilities for basic ophthalmic practice and carrying out certain key investigations and procedures, e.g. photography, fluorescein angiography, biometry etc. There should be access to more specialised techniques, e.g. B-scan ultrasound and electrophysiology which may be located in neighbouring referral centres.	Consultant staffing levels per unit for training recognition for one- or two-year programmes. Trainees' minimum quotas of procedures (e.g. 40 completed operations over the first 2 years).	No justification for the recommendations given in the document.

ophthalmology).	There should be access to, and involvement in, an orthoptic department and a service for the provision of low visual aids and contact lenses.
Training recommendation Yes	Routine radiological investigations with access to CT and MRI scanning should be available. There should be close liaison with other disciplines such as neurology, neurosurgery, plastic and faciomaxillary surgery, metabolic medicine etc.
Delivery recommendation No	
Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No	More experienced SHOs should be involved in supervised intraocular surgery. By the end of the second year, it is expected that SHOs should have achieved reasonable proficiency in small incision cataract surgery. A minimum number of 50 supervised complete intraocular operations should have been performed or, in modular training, at least 10 modular equivalent procedures and 40 completed operations, including the pre- and postoperative assessment and management.
Research-based supporting evidence (yes/no) No	Thereafter, at least 50 intraocular operations should be undertaken per year. It is expected that the majority of these operations will be small incision cataract surgery. It is a curricular requirement for this number of procedures to be available to trainees and is a condition of educational approval.
	Where SHOs are on rotation between hospitals, there must be an equitable distribution of surgical training in all units.
	Experience should be provided in emergency ophthalmology and SHOs should be involved in the management of ophthalmic casualties, although they should not attend more than 2 casualty sessions per week.
	There should be a regular on call commitment although this should not necessarily mean that postholders must be resident. It is not necessary for eye casualty to be open throughout the 24 h to be approved for training.

RCOPHTH: Curriculum of HST in Ophthalmology

OPH DOC 4

College / association **Royal College of Ophthalmologists**	Recommendations (training experience)	Volume / concentration implications	Justification
Title Curriculum of Higher Specialist Training in Ophthalmology Year 2003, March Report produced by Training Committee Aim of report Establishes training aims together with the objectives against which the deanery-based training programmes and the progress of individual SpRs should be assessed. Training recommendation Yes Delivery recommendation No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no)	<u>Subspecialty Section 1: Oculoplastic, Adnexal and Lacrimal Surgery</u> Essential clinical experience requirements: - to have attended a minimum of 20 oculoplastic and/or adnexal clinics; - to have undertaken a minimum of 40 oculoplastic and/or adnexal operations; - actively to have participated in, or assisted at: a) a minimum of 3 major ptosis repairs b) the interpretation of a minimum of 10 special radiographs relevant to the subspecialty (e.g. CT, MRI) c) the management of 5 patients with thyroid eye disease. <u>Subspecialty Section 2: Cornea and External Diseases</u> Essential clinical experience requirements: - to have attended a minimum of 20 corneal and/or external eye disease clinics; - actively to have participated in, or assisted at, a minimum of 6 corneal transplant operations; - actively to have participated in the management of the complications of corneal transplantation, including rejection and refractive problems. <u>Subspecialty Section 3: Cataract & refractive Surgery</u> Essential clinical experience requirements: - to have undertaken a minimum of 300 complete surgical cataract cases as SpR; - to show documented evidence of having undertaken a personal assessment by audit of the above cases - exposure to (at least) theoretical aspects of refractive surgery, including	Trainees' minimum quotas of procedures (e.g. 300 complete surgical cataract cases whilst as an SpR) according to sub-specialty.	No justification for the recommendations given in the document.

No	excimer laser techniques.
Research-based supporting evidence (yes/no)	Subspecialty Section 4: Glaucoma
	Essential clinical experience requirements:
No	- to have attended a minimum of 20 glaucoma clinics;
	- to have undertaken a minimum of 30 procedures (surgical or laser) for glaucoma.
	Subspecialty Section 5: Retina, Vitreous and Uvea (including Ocular Oncology)
	Essential clinical experience requirements:
	- to have attended a minimum of 40 subspecilty retinal clinics (at least 20 surgical and 20 medical);
	- to have undertaken a minimum of 40 posterior segment laser treatments;
	- actively to have participated in, or assisted at
	a) a minimum of 20 retinal operations by conventional or vitrectomy techniques
	b) a minimum of 10 uveitis treatments
	c) to have performed, under supervision, a
	minimum of 20 B scan ultrasound examinations
	d) to have spent at least 1 day with a social worker for the visually impaired on home visits.
	Subspecialty Section 6: Neuro-Ophthalmology
	Essential clinical experience requirements:
	- to have attended a minimum of 20 neuro-ophthalmology clinics or have otherwise been exposed to the investigation and management of an equivalent number of patients covering the full range of neuro-ophthalmic disease.
	Subspecialty Section 7: Paediatric Ophthalmology and Strabismus
	Essential clinical experience requirements:
	- to have attended a minimum of 20 paediatric ophthalmic clinics;
	- to have undertaken a minimum of 20 extraocular muscle surgery cases;
	- actively to have participated in the ophthalmoscopic screening for ROP of a minimum of 10 neonates.

RCOPHTH: Guide for HST in Ophthalmology

OPH DOC 3

College / association **Royal College of Ophthalmologists / Royal College of Surgeons of Edinburgh**	Training recommendations	Volume / concentration implications	Justification
Title Guide for Higher Specialist Training in Ophthalmology Year 2003, March Author Report produced by Training Committee Aim of report Guidelines intended to assist departments in formulating training programmes for SpRs (supplement the curriculum for HST in ophthalmology). Training recommendation Yes Service delivery recommendation No	A SpR rotation must have available the subspecialties listed in the SpR curriculum. Access to teaching in ocular pathology is important. No unit with only two consultants should train SpRs. A three consultant unit may qualify for SpRs in the first 2 years of training, but for more senior trainees, there should be at least 4 consultants with clearly defined specialist interests. The trainee should not see more than 15 patients during an outpatient session. A special clinic is one in which patients with a single diagnosis or group of related diagnoses are seen exclusively, and to which there internal referrals. There should not be a mixture of patients in such a session, even if the bias is towards a particular subspecialty, because this dilutes the trainees' experience. There should be a dedicated, fully equipped ophthalmic outpatient department with appropriate equipment and examination facilities. In most cases there should be a theatre dedicated to ophthalmology, but in small units, this may not be possible.	Units for SpR training need 3 consultants for first and second year training, and 4 or more with special interests for senior training.	No justification for the recommendations given in the document.

Explicit volume/concentration implication	
Training (yes/no)	
No	
Service (yes/no)	
No	
Research-based supporting evidence (yes/no)	
No	

RCOPHTH: Curriculum of HST in Medical Ophthalmology

OPH DOC 6

College / association **Royal College of Ophthalmology**	**Recommendations (training experience)**	**Volume / concentration implications**	**Justification**
Title Curriculum of Higher Specialist Training in Medical Ophthalmology Year 2002, March Author Report produced by Training Committee Aim of report Establishes the training aims together with the objectives against which the deanery-based training programmes and the progress of individual SpRs should be assessed. It	1. General Medical Ophthalmology including Vascular Disease, Diabetes, Endocrinology Essential Experience requirements: - to have attended medical ophthalmology and diabetes clinics (30); - to have attended clinics in systemic hypertension and hyperlipidemia (10); - to have attended general endocrine clinics (including exposure to thyroid cases) (20); Laser experience/sessions (diabetic/PRP/maculopathy) (20). 2. Neurology and Neuro-Ophthalmology Essential experience requirements: - to have attended neurology clinics (20); - to have attended neuro-ophthalmology clinics (20) and glaucoma clinics (10);	Trainees' minimum quotas of procedures (e.g. 30 cases of laser therapy of macular disease).	"Higher Specialist Training is designed to provide a structured programme of learning which facilitates the acquisition of knowledge, understanding, skills and attitudes to a level appropriate to a medical ophthalmic specialist who has been fully prepared to begin his/her career as an independent practitioner in this specialty…." (p.1)

also sets out some of the arrangements proposed for such assessment.	- to have attended neuro-imaging reporting sessions (20);
Training recommendation	- to have carried out botulinum toxin injections for facial nerve disorders (20).
Yes	<u>3. Rheumatology/Ocular Inflammatory Disease (including HIV) and Dysthyroid Eye Disease</u>
Delivery recommendation	Essential experience requirements:
No	- to have attended inflammatory eye disease clinics (20);
Explicit volume/concentration implication	- to have attended clinics specialising in juvenile chronic arthritis (5);
Training (yes/no)	- to have attended medical outpatients specialising in the management of rheumatology (10) and vasculitis (10);
Yes	- to perform subconjunctival orbital floor (10) and subtenon's injections (10);
Service (yes/no)	to attend corneal/ocular surface disease clinics (20).
No	<u>4. Medical Retina</u>
Research-based supporting evidence (yes/no)	Essential experience requirements:
No	- to have attended medical retina clinics (30);
	- to have exposure to visual electrophysiology (10 sessions);
	- to have exposure to modern ocular imaging including angiography (20 sessions);
	- to have been trained in laser therapy of macular disease (20).

Obstetrics and Gynaecology

RCOG: Subspecialisation in Maternal & Fetal Medicine

OG DOC 4

College / association **Royal College of Obstetricians & Gynaecologists**	Training recommendations	Volume / concentration implications	Justification
Title Subspecialisation in Maternal & Fetal Medicine Year 1997, December Author Report produced by Working party Aim of report To advise and keep under review the development of subspecialisation within the field of obstetrics and gynaecology including requirements and regulations for subspecialist training and accreditation. Training recommendation Yes Delivery recommendation (yes/no)	<u>To be eligible for subspecialty training in maternal and fetal medicine a centre must:</u> - provide an integrated service for the referral and transfer of high-risk obstetric patients, in close collaboration with other obstetricians and discipline within and outwith the centre; - have an adequate clinical workload with a full range of high-risk maternal and fetal problems. Usually the centre would be expected to have at least 3500 births per year including a significant proportion of referred/transferred high perinatal risk patients; - be a referral centre for the specialised prenatal diagnosis of fetal abnormalities, of which there should be at least 40 diagnosed cases/year; - ultrasound facilities and expertise for detecting the majority of structural malformations in the fetus - a close working relationship with a medical genetics centre and clinical genetics consultant(s); - provide a full range of fetal monitoring/assessment techniques; - have a neonatal intensive care unit with consultant paediatricians;	A centre undertaking subspecialty training in maternal and fetal medicine would be expected to have at least 3500 births per year and be referred at least 40 cases of fetal abnormalities per year.	"This higher degree of specialisation indicates intensive training, experience and expertise. The aims of subspecialisation are: - to improve knowledge, practice, teaching and research; - to promote the concentration of very specialised expertise, special facilities and clinical material that will be of considerable benefit to some patients…." (p. 2)

No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	- have an association with a neonatal surgical unit; - have a 24-hour obstetric anaesthetic service with consultant anaesthetists; - have close collaboration with an adult intensive care unit having a full range of diagnostic facilities and support; - have an adequate perinatal pathology service with at least one consultant pathologist; - have adequate support from, and close collaboration with, a biophysics service.		

RCOG: Subspecialisation in Reproductive Medicine

OG DOC 2

College / association **Royal College of Obstetricians & Gynaecologists**	**Recommendations (training)**	**Volume / concentration implications**	**Justification**
Title Subspecialisation in Reproductive Medicine Year 1997, December Author Report produced by Working party Aim of report To advise and keep under review developments in further specialisation within the field of obstetrics and	<u>To be eligible for subspecialty training in reproductive medicine a centre must:</u> - provide a service for the referral and transfer of patients with endocrine and infertility problems requiring special diagnostic and therapeutic facilities and expertise, with close collaboration with other gynaecologists within and outwith the centre; - have an adequate clinical workload with a full range of gynaecological endocrine, fertility and infertility (female and male) problems; - have appropriate facilities for investigating the relevant endocrine and infertility disorders; - have access to appropriate endocrine and ultrasound investigations for monitoring women having ovulation		"This higher degree of specialisation indicates intensive training, experience and expertise. The aims of subspecialisation are: - to improve knowledge, practice, teaching and research; - to promote the concentration of very specialised expertise, special facilities and clinical material that will be of considerable

gynaecology, including training implications, and to make recommendations. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No Research-based supporting evidence (yes/no) No	inductions; - have an established assisted conception programme, including assisted fertilisation with appropriate clinical and laboratory facilities; - have an adequate gynaecological pathology service.		benefit to some patients…" (p. 2).

RCOG: Subspecialisation in Urogynaegology

OG DOC 5

College / association **Royal College of Obstetricians & Gynaecologists**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Subspecialisation in Urogynaecology Year 1998, August Author	<u>To be eligible for subspecialty training in urogynaecology a centre must:</u> - provide a service for the referral and transfer of patients with urogynaecological problems, with close collaboration with other gynaecologists within and outwith the centre; - have an adequate clinical workload, defined as a minimum of 500 new patients per year referred and	A centre undertaking subspecialty training in urogynaecology must have a minimum clinical workload of 500 new patients per year referred and undergoing	"This higher degree of specialisation indicates intensive training, experience and expertise. The aims of subspecialisation are: - to improve knowledge, practice,

Report produced by Working party Aim of report To advise and keep under review the development of subspecialisation within the field of obstetrics and gynaecology, including requirements and regulations for subspecialist training and accreditation. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	undergoing urodynamic assessment. The centre should have a wide range of urogynaecological problems; - have a well equipped urodynamic laboratory; - there must be easy access to neurophysiological equipment, ultrasound video, etc; - have close collaboration with a consultant urologist, a consultant for medicine of the elderly, a colorectal surgeon, a neurologist etc; - have close support from a medical physics service.	urodynamic assessment.	teaching and research; - to promote the concentration of very specialised expertise, special facilities and clinical material that will be of considerable benefit to some patients…" (p. 2)

RCOG: Subspecialisation in Gynaecological Oncology

OG DOC 3

College / association Royal College of Obstetricians &	Training recommendations	Volume / concentration implications	Justification

Gynaecologists **Title** Subspecialisation in Gynaecological Oncology Year 2002, May Author Report produced by Working party Aim of report To advise and keep under review the development of subspecialisation within the field of obstetrics and gynaecology, including requirements and regulations for subspecialist training and accreditation. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes	To be eligible for subspecialty training in gynaecological oncology a centre must: - provide a service for the referral and transfer of patients with gynaecological cancer, with close collaboration with other gynaecologists within the network; - have a throughput of at least 150 new cases of gynaecological cancer per year with a full range of gynaecological oncology problems; - have a colposcopy clinic; - have a CPA-accredited gynaecological pathology service provided by consultant pathologists and their supporting staffs; - have adequate access to modern diagnostic imaging facilities and have close collaboration with consultant radiologists and nuclear medicine specialists. To train an individual the centre must have a programme which guarantees exposure to the whole breadth of the subspecialty, with attachments either in the form of modules or integrated into a weekly programme according to the following formula. These are minimum requirements: Radiation oncology - 2 weeks Chemotherapy - 4 weeks Colorectal surgery - 4 weeks Urological surgery - 2 weeks Palliative care - 3 weeks Plastic surgery - 1 week Pain clinic - 1 week	It is accepted that the gynaecological cancer centre will not always be on a single site but timetables and programmes must be such as to allow adequate joint consultation. To train an individual the centre must have sufficient workload to guarantee that the trainee will perform at least 60 (procedures) as primary surgeon. The minimum number of tasks to be completed in 2 years is: - 20 complete pelvic node dissections; - 20 complete ureteric dissections; - 20 radical cervical excisions; - 15 groin node dissections; - 15 radical excisions of vulval cancer; - 40 laparotomies for stage 3/4 ovarian cancer.	"This higher degree of specialisation indicates intensive training, experience and expertise. The aims of subspecialisation are: - to improve, knowledge, practice, teaching and research; - to promote the concentration of very specialised expertise, special facilities and clinical material that will be of considerable benefit to some patients…" (p. 2)

Research-based supporting evidence (yes/no) No			

RCOG: Subspecialisation in Sexual and Reproductive Health

OG DOC 6

College / association **Royal College of Obstetricians & Gynaecologists / Faculty of Family Planning and Reproductive Health**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Subspecialisation in Sexual and Reproductive Health Year 2003, May Author Report produced by Working party Aim of report To advise and keep under review the development of subspecialisation within the field of obstetrics and gynaecology including requirements and regulations for subspecialist training and accreditation.	<u>To be eligible for training in sexual and reproductive health, the following requirements should be met:</u> - the centre should provide a comprehensive community family planning service to a large catchment area. It is expected that most clinic services will be concentrated within one trust, although cross boundary arrangements for targeted training will be accepted when appropriate; - the service must give experience in all methods of birth control, cervical cytology screening, pregnancy testing and advice, sterilisation and vasectomy counselling, and general preventative health care etc; - there should be links with general practice and preventative medicine; - opportunity for family planning training should be available;		"This higher degree of specialisation indicates intensive training, experience and expertise. The aims of subspecialisation are: - to improve knowledge, practice, teaching and research; - to promote the concentration of very specialised expertise, special facilities and clinical material that will be of considerable benefit to some patients…." (p. 2)

Training recommendation Yes	- there should be adequate opportunities for trainees to pursue experience on a full-time basis in the various facets of this training; - opportunities should be available for training in the management of large community services including control of budgets, personnel management etc; - opportunities should be available for training in screening programmes both for cervical and for breast cancer.		
Delivery recommendation (yes/no) No			
Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No			
Research-based supporting evidence (yes/no) No			

RCOG: Sp.Skill Tr.Module: Maternal Medicine

OG DOC 9

College / association **Royal College of Obstetricians & Gynaecologists**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Special Skills Training Module: Maternal Medicine	The practical component (of the module) will involve attendance at clinics and ward rounds. In particular, the trainee has to attend at least 30 maternal medicine clinics, 12 joint antenatal/diabetic clinics, 4 neonatal and 2 intensive-care ward rounds and 5 sessions (clinics or ward rounds) in each of 5 medical disciplines selected from a		"The aim of training in maternal medicine is to: - provide a high level of skill in the management of disorders affecting the mother before pregnancy, during
Year 2002, June			
Author			

Report produced by RCOG Postgraduate Training Department	list including haematology, endocrine/diabetes, rheumatology etc.		pregnancy, labour and the puerperium; - improve knowledge, practice and teaching in the discipline….” (p. 3)
Aim of report Overview of skills required for the management of women with medical problems in pregnancy.			
Training recommendation Yes			
Delivery recommendation (yes/no) No			
Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No			
Research-based supporting evidence (yes/no) No			

RCOG: Sp.Skills Tr.Module: Assisted Reproduction

OG DOC 10

College / association **Royal College of Obstetricians & Gynaecologists / British Fertility Society**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Special Skills Training Module: Assisted Reproduction	This course complements the BFS/RCOG special skills training on the management of the infertile couple and would be expected to be carried out in conjunction with it. To be eligible as a training centre in Assisted	The centre should have an adequate clinical workload of at least 500 new	“The modern management of the infertile couple is an essential component to the training of every
Year 2002, June			

Author Report produced by RCOG Postgraduate Training Department Aim of report Overview of skills required for the management of the infertile using assisted reproduction techniques Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	Reproduction the following criteria must be met: - the centre should provide a service for the management of patients with endocrine and infertility problems, within an appropriate setting, encompassing a dedicated infertility clinic, where both male and female partners are seen together; - the centre should have an adequate clinical workload (at least 500 new couples per year), incorporating a comprehensive range of disorders associated with infertility; - the centre should have access to appropriate laboratory facilities to allow appropriate investigation of male and female patients; - the centre should have access to appropriate clinical facilities for investigation of relevant endocrine and infertility disorders; - the centre should have access to daily ultrasound investigations for monitoring women undergoing controlled ovarian stimulation; - the centre should provide a licensed assisted conception service offering in excess of 250 fresh IVF cycles per year. Cryopreservation facilities of gametes and embryos should be available as well as donor gamete treatment options.	couples per year. The centre should provide a licensed assisted conception service offering in excess of 250 fresh IVF cycles per year.	obstetrician/gynaecologist….” (p. 3)

RCOG: Sp.Skills Tr.Module: The Management of the Infertile Couple

OG DOC 13

College / association	Training recommendations	Volume / concentration implications	Justification
Royal College of Obstetricians & Gynaecologists / British Fertility Society			

Title Special Skills Training Module: The Management of the Infertile Couple Year 2002, June Author Report produced by RCOG Postgraduate Training Department Aim of report Overview of the knowledge and clinical skills required for the management of the infertile couple. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	<u>To be eligible as a training centre in the management of the infertile couple, the following criteria must be met:</u> - the centre should provide a service for the management of patients with endocrine and infertility problems, within an appropriate setting, encompassing a dedicated infertility clinic, where both male and female partners are seen together; - the centre should have an adequate clinical workload (at least 250 new couples per year), incorporating a comprehensive range of disorders associated with infertility; - the centre should have access to appropriate laboratory (endocrine and andrology) facilities; - the centre should have appropriate clinical facilities for investigation of relevant endocrine and infertility disorders; - the centre should have access to daily ultrasound investigations for monitoring women having ovulation induction; - if the centre does not have an in-house IVF unit there must be close cooperation with an HFEA-licensed centre allowing potential trainees appropriate observational and practical experience.	The centre should have an adequate clinical workload of at least 250 new couples per year.	"The modern management of the infertile couple is an essential component to the training of every obstetrician and gynaecologist. The specialist nature of the subject, however, means that during general training through the specialist registrar years only a relatively superficial knowledge and clinical skills base will be established…." (p.3)

RCOG: Sp.Skills Tr.Module: Ultrasound Imaging in the Management of Gynaecological Conditions

OG DOC 8

College / association **Royal College of Obstetricians & Gynaecologists**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Special Skills Training Module: Ultrasound Imaging in the Management of Gynaecological Conditions	The practical component (of the module) will involve attendance at clinics where patients are referred for ultrasound imaging as part of the management of their gynaecological conditions (early pregnancy clinics, gynaecological evaluation clinics, menstrual disorder clinics, pelvic mass clinics, etc.). Gynaecology outpatient clinics where ultrasound imaging is immediately available are also appropriate. The trainee must attend at least 30 such sessions, at least 10 of which should be in a dedicated early pregnancy clinic.		"Ultrasound imaging has become an integral part of the management of many gynaecological conditions. This module will help to equip individuals with the knowledge and skills required to use ultrasound imaging within the clinical context…." (p. 3)
Year 2002, June			
Author			
Report produced by RCOG Postgraduate Training Department			
Aim of report Overview of skills required to use ultrasound imaging in the management of gynaecological conditions.			
Training recommendation Yes			
Delivery recommendation (yes/no) No			

Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No
Research-based supporting evidence (yes/no) No

RCOG: Sp. Skills Tr.Module: Urodynamics

OG DOC 12

College / association **Royal College of Obstetricians & Gynaecologists**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Special Skills Training Module: Urodynamics Year 2002, June Author Report produced by RCOG Postgraduate Training Department Aim of report Overview of skills required for urodynamic investigation in women Training recommendation Yes	The practical component (of the training programme) will involve attendance at clinics where patients are referred for urodynamic investigation. The trainee must attend at least 30 such sessions. A summary of observations of clinical practice and formal testing of a minimum of 30 patients must be undertaken, including symptoms, urodynamic tests, diagnoses and treatment recommendations.	Overall management of a minimum of 30 patients.	"Urodynamic investigations are an essential component in the management of women who present with lower urinary tract symptoms. This module will help to equip individuals with the knowledge and skills required to use urodynamic investigations within the clinical context…." (p. 3)

Delivery recommendation (yes/no) No			
Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No			
Research-based supporting evidence (yes/no) No			

RCOG: Sp.Skills Tr.Module: Obstetric Leadership

OG DOC 14

College / association **Royal College of Obstetricians & Gynaecologists / British Maternal and Fetal Society**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Special Skills Training Module: Preparing for Obstetric Leadership on the Labour Ward	In order to provide exposure to the required case mix, it is anticipated that the unit will deliver more than 3000 women per annum. It is suggested that this could be interpreted reasonably if numbers fall a little below that level and that quality and teaching could be taken into consideration. Additionally, the unit must be at CNST		"The labour ward is an area of enormous complexity within any hospital. At any time there may be women experiencing normal childbirth, as well as others, fortunately fewer in number, who may be suffering complications of pregnancy. It is also an area where successful multidisciplinary working
Year 2003, October			
Author			
Report produced by RCOG Postgraduate Training Department			

Aim of report Overview of skills required for individuals to be the lead obstetrician on the labour ward. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No Research-based supporting evidence (yes/no) No	maternity level 1 and must have a level 2 neonatal unit on site.		is vital for patient safety." (p. 5)

RCOG: Survey of Training 2002

OG DOC 1

College / association **Royal College of Obstetricians & Gynaecologists**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Survey of Training 2002 Year 2003, August Author	Trainees may fail to acquire surgical skill targets (under competency-based assessment) due to a lack of exposure. If the number of operative procedures performed as a part of structured training is monitored, any lack of surgical exposure would be highlighted.		Over 90% of respondents in the survey agreed with the importance of monitoring the number of procedures performed as part of structured

Report produced by RCOG Trainees Committee	Structured training should involve minimum surgical exposure and expertise, at least to a level that enables safe emergency care. For example, in the North West Deanery, four majors (procedures) per month is set as an audit standard for all senior SpRs in Years 4/5 undertaking general training.		training. This would possibly help to address the decline in operative experience. If numbers are to be monitored, the next step is to set the minimum number and type of procedure which a trainee of a particular grade should undertake. The survey suggests that 30% of senior SpRs perform less than four major procedures a month. (p. 7)
Aim of report Survey of trainees in O&G.			
Training recommendation Yes			
Delivery recommendation (yes/no) No			
Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No			
Research-based supporting evidence (yes/no) Yes (References provided)			

RCOG: A Blueprint for the Future

OG DOC 18

College / association **Royal College of Obstetricians & Gynaecologists**	**Recommendations**		**Volume / concentration implications**	**Justification**
	Training	**Service delivery**		
Title A Blueprint for the Future	The current ratio of consultants to all trainees is 1:2.2. The appropriate	The service deficit that will follow the loss of doctors in SpR posts would be best solved by the introduction of an evolving consultant role with a need for greater commitment to on-call and emergency service provision.		"The rapid evolution of obstetrics and gynaecology, combined with
Year 2000, December				

Author	required ratio of consultants to trainees would be reversed to 4:1. The smaller number of career trainees (envisaged over the next few years) will force a review of all deanery rotations – not all trusts will necessarily wish or be selected to remain as training hospitals.	The current two-tier on-call rotas (SHO and SpR resident on-call) with consultants on-call from home will, in most units, be impossible to maintain with the reduced number of trainees overall. Reduction in the numbers of SHOs and changed roles inevitably produce a service deficit that cannot be completely matched by reallocation of tasks to nurses/midwives or the extension of responsibilities in the SpRs and consultants. An imbalance between emergency admissions and available beds for elective work and appropriately trained staff on gynaecological and obstetric wards will have major implications for service provision and throughput. There is value in establishing emergency gynaecology units, early pregnancy assessment units and daycare assessment units for obstetric complications.	changes in working practices, employment law and training, have produced unsupportable pressures on models of service provision which have served well until recent years….” (p. 5)
Report produced by Working Party			
Aim of report To look at future service provision in Obstetrics & Gynaecology.			
Training recommendation Yes			
Delivery recommendation (yes/no) Yes			
Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No			
Research-based supporting evidence (yes/no) Yes (RCOG & Journal References provided)			

RCOG: Clinical Standards: Advice on Planning the Service in Obstetrics & Gynaecology

OG DOC 15

College / association	Recommendations		Volume / concentration implications	Justification
Royal College of Obstetricians & Gynaecologists	**Training**	**Service delivery**		
Title Clinical Standards: Advice on Planning the Service in Obstetrics & Gynaecology: also Key standards 1–12 Year 2002, July Report produced by RCOG Standards Board Aim of report Summarises the sources and purposes of the various types of standards already set, by a range of bodies, for the guidance of individual clinicians and healthcare organisations. Training recommendation No Delivery recommendation Yes	Implementation of structured training included clear standards to be achieved. The development of training agreements, with regular formative and summative assessments based in identified criteria and targets has produced an incremental and structured progression to the award of the CCST. Implicit in training towards the CCST is the arrangement of rotations through training centres that are both able and willing to provide quality education. The shorter time of training to specialist level demands a more concentrated education with an inevitable impact on service provision. It is anticipated that the maintenance and development of training standards will be closely related to the introduction and assessment of clinical standards, and it is	Such (training) developments may impinge on individual clinical practice or on an individual's contribution to the provision of clinical services as a member of a team. There will be conflict between essential, quality activities (clinical governance, educational meetings etc.) and the day-to-day provision of service. It is inevitable that the development of quality issues of relevance to the maintenance of good medical practice and the provision of the service will be inhibited until such tension can be resolved. In addition to this report there are documents covering Key Standards: 1 Labour ward 2 Antenatal ultrasound screening 3 Early pregnancy loss 4 Colposcopy 5 Gynaecological cancer 6 Urogynaecology 7 Menorrhagia	The report and key standards advise on `best practice' for the delivery of clinical services.	"Clinical directors have indicated the need to develop a list of clinical priorities and have requested a set of attainable clinical standards that would allow them to prioritise developments." (p. 5)

Explicit volume/concentration implication Training (yes/no) No Service (yes/no) No	likely that they will feature in the evolving hospital recognition and accreditation system.	8 Induced abortion 9 Sterilisation 10 Infertility 11 Gynaecological examination 12 Outpatient times			
Research-based supporting evidence (yes/no) Yes (RCOG Publications)					

Paediatrics

RCPCH: Paediatric Training Handbook

PAED DOC 3

College / association	Training recommendations	Volume / concentration implications	Justification
Royal College of Paediatrics and Child Health Title Paediatric Training Handbook Year 2003, September Author Report produced by RCPCH Aim of report Provides guidance and overview of requirements for basic and higher specialist training in paediatrics. Training recommendation Yes Delivery recommendation (yes/no) No	<u>SHO training</u> General profressional training is for 2 years. Career paediatricians must spend a minimum period of 6 months in approved general paediatric SHO post and 6 months in an approved neonatal post in a unit which undertakes Level 2 and Level 3 neonatal intensive care (usually in a regional neonatal intensive care unit). The unit should have a dedicated on-call system.Time spent in locum SHO and Trust Doctor posts cannot count towards the minimum requirements of 2 years GPT. <u>Higher specialist training</u> HST consists of 2 years' core paediatrics (for all trainees) and 3 years' experience depending on career intentions (re. becoming a general or tertiary consultant paediatrician). For all, at least 6 months experience in a DGH setting is necessary. Core training must include 4–6 months neonatal care. Post care training for general paediatrics includes 6–12 months in a specialty post. For tertiary paediatrics, trainees enter tertiary training programmes (10 being recognised by the STA (p. 35)). <u>SHO training recognition</u> A minimum of 2 consultant trainers in a department. All SHOs must attend at least 10 OP clinics over 6 months (or 5 neonatal clinics). <u>Core SpR post recognition</u>	Neonatal training post requirements to be met (i.e. in Level 2 or 3 units); consultant staffing levels .	None given

Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No	6 months in DGH; sufficient acute referrals per months; 2 clinics each week with 3–4 new referrals. <u>Core neonatal post recognition</u> 6 months (form Sept. 2003) Joint post between general paediatrics and neonatology are unacceptable; Unit providing level 2 or level 3 intensive care; transport team; supervision by 2 consultants with neonatal interest.		
Research-based supporting evidence (yes/no) No			

RCPCH: Sub-Specialty Training in Neonatal Medicine

PAED DOC 1

College / association **Royal College of Paediatrics and Child Health**	**Training recommendations**	**Volume / concentration implications**	**Justification**
College/association Royal College of Paediatrics and Child Title Sub-Specialty Training in Neonatal Year 2001, October Author Report produced by SAC for Neonatal Medicine Aim of report Document specifying the process of regulating sub-specialty training in Neonatal Medicine.	Mandatory requirements for unit contributing to HST Training Scheme in Neonatal Medicine: - six designated intensive care cots - cares for >70 VLBW infants/year - ventilates for >24 h 100 babies/year - >1500 IC days (level 1+2)/year - 20 sessions of dedicated Consultant time (minimum of 2 consultants with little or no involvement in general paediatric cover).	For training recognition: minimum throughput of very low birthweight infants; minimum consultant cover.	No justification for the recommendations given in the document.

Training recommendation Yes			
Delivery recommendation (yes/no) No			
Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No			
Research-based supporting evidence (yes/no) No			

BPAIIG: Paediatric Allergy, Immunology & Infectious Diseases

PAED DOC 5

College / association **British Paediatric Allergy, Immunity and Infection Group**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Sub-Specialty Training in Paediatric Allergy, Immunology & Infectious Diseases	Years 4/5 training requirements for Paediatric infectious diseases and immunology units: centres should have a minimum of 30 PAIID admissions and consults a month, should see at least 30 PAIID outpatients a month and see over 100 immunocompromised patients in a year. There must be a minimum of 2 FTE list specialist consultants.	For training recognition: volume of admissions and outpatient caseloads per unit; consultant staffing level for unit.	No justification for the recommendations given in the document.
Year 2003, April			
Author			

Report produced by BPAIIG
Aim of report Overview of requirements for sub-specialty training in Paediatric Allergy, Immunology and Infectious Diseases.
Training recommendation Yes
Delivery recommendation (yes/no) No
Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No
Research-based supporting evidence (yes/no) No

BSPED: Training in Paediatric Endocrinology and Diabetes

PAED DOC 4

College / association **British Society for Paediatric Endocrinology and Diabetes**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Training in Paediatric Endocrinology and Diabetes in the UK	Requirements for Training Institutions: - the centre must provide adequate	Diabetic clinic caseload for training	No justification for the recommendations given in the

Year N/A Author Report produced by BSPED Aim of report Document setting out the minimum requirements for training in the subspecialty of Paediatric Endocrinology and Diabetes. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No Research-based supporting evidence (yes/no) No	experience in all fields of endocrinology including emergency care; - the centre must have easy access and close relationships with other relevant specialties such as nuclear medicine, imaging facilities, surgery and laboratory facilities; - population served by training centre >2 million; - diabetes clinic >50 patients.	recognition.	document.

BSPGHAN: Paediatric Endoscopy

PAED DOC 8

College / association **British Society of Paediatric Gastroenterology, Hepatology and Nutrition**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Recommendations for Training in Paediatric Endoscopy Year 2001, March Author Report produced by BSPGHAN Aim of report Outlines the pre-requisites for training and experience required for Paediatric Endoscopy. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no)	A Unit providing training in Paediatric Gastroenterology should be equipped with modern video endoscopy equipment suitable for use in paediatric practice. High-quality tele-visual display and image recording facilities should be mandatory. It is suggested that most trainees require in the order of 100 diagnostic upper gastrointestinal endoscopies and 100 diagnostic ileocolonoscopies under supervision before the minimum of acceptable competency is achieved. Threshold numbers of procedures for higher level training include: 5 variceal haemostasis procedures; 10 oesophageal dilations; 5 percutaneous gastrostomies. However, the number performed does not equate with competence.	Volume of procedures to be undertaken by higher level trainee.	No justification for the recommendations given in the document.

Research-based supporting evidence (yes/no) No				

BPNA: HST in Paediatric Neurology

PAED DOC 10

College / association **British Paediatric Neurology Association**	**Recommendations**		**Volume / concentration implications**	**Justification**
	Training	**Training**		
Title Recommendations for Higher Specialist Training Programmes in paediatric Neurology Year N/A Author Report produced by BPNA Aim of report Provides recommendations concerning higher specialist training requirements in paediatric neurology. Training recommendation Yes Delivery recommendation (yes/no) No	<u>The Neurology Service and Staffing</u> Mandatory Requirements: - population served 1 million or more; - two or more Consultant Paediatric Neurologists; - close liaison with tertiary subspecialties including neurosurgery, child psychiatry, adult neurology, metabolic disease, genetics, neuropathology, neonatology, tertiary paediatric medical and surgical subspecialties, audiology and ophthalmology; - close liaison with interdisciplinary remedial therapy team including physiotherapy, occupational therapy etc.	<u>Facilities</u> Mandatory Requirements: - outpatient facilties with disabled access adequate for evaluation of children with neurological disorders; - inpatient facilities adequate for children with neurological disorders; - paediatric intensive care unit; - access to specialist expertise in ten different fields of paediatric neurology including epilepsy, rehabilitation, neuromuscular diseases etc.	For training recognition: population served: 1 million or more; consultant staffing level: 2 paediatric neurologists.	No justification for the recommendations given in the document.

Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No			
Research-based supporting evidence (yes/no) No			

PRES: Paediatric Rheumatology Syllabus

PAED DOC 6

College / association **Paediatric Rheumatology European Society**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title European Training Syllabus and Programme in Paediatric Rheumatology Year N/A Author Report produced by PRES Aim of report Syllabus describing the knowledge, skills and attitudes necessary for Paediatric Rheumatology.	Obligatory Modules: <u>Juvenile Idiopathic Arthritis</u> The maximum number of patients to be seen during the training period (min 2 years) is: - full clinical assessment of 50 new patients spread across all JIA disease groups; - 200 patients in continuous follow up care spread across all JIA disease groups. <u>Inflammatory Connective Tissue Diseases</u> The minimum no. of patients to be seen during the training period is: - 10 new patients spread across following disease groups: SLE, scleroderma,	Volume of procedures to be undertaken by higher-level trainee.	No justification for the recommendations given in the document.

Training recommendation Yes Delivery recommendation (yes/no) No	dermatomyositis etc; - 20 patients in continuous follow up care for at least 1 year. <u>Non-inflammatory Musculoskeletal Disorders</u>		
Explicit volume/concentration implication Training (yes/no) Yes Service (yes/no) No	Min no of patients to be seen during the training period is: - 100 patients spread across all conditions listed in syllabus under "non-inflammatory disorders"; - 5 patients spread across heritable disorders specified in syllabus.		
Research-based supporting evidence (yes/no) No			

Psychiatry

RCPSYCH: BST Handbook

PSY DOC 1

College / association **Royal College of Psychiatrists**	**Training recommendations**	**Volume / concentration implications**	**Justification**
Title Basic Specialist Training Handbook Year 2003, January Author Report produced by Basic Training Specialist Advisory Committee Aim of report To provide guidance on the organisation and delivery of basic specialist training in psychiatry and identifies standards, which must be achieved if schemes are to be approved by the Royal College of Psychiatrists. Training recommendation Yes Delivery recommendation (yes/no) No Explicit volume/concentration implication	<u>Size of training scheme</u> Currently there is wide diversity with some stand-alone schemes training as few as 3 or 4 trainees while larger co-ordinated training schemes have as many as 60–70 trainees. Very small schemes (less than 8 trainees) are unlikely to be granted more than limited training approval. <u>Training Placements</u> Each placement should be clearly designated as providing experience in general psychiatry, one of its three recognised subspecialties, or one of the five other recognised specialties. The first 12 months of training should normally be in general adult psychiatry, or a combination of 6 months in the psychiatry of old age and 6 months of general adult psychiatry.		No justification for the recommendations given in the document.

Training (yes/no)
No
Service (yes/no)
No
Research-based supporting evidence (yes/no)
No

Specialty training for general practice

JCPTGP: Training Programme

GP DOC 1

College / association	Recommendations (training)	Volume / concentration implications	Justification
Joint Committee on Postgraduate Training for General Practice			
Title The Training Programme	<u>Prescribed Experience</u> Training not less than 36 months full-time employment in posts approved by the Joint Committee. This includes at least 12 months employment as GP Registrar within the NHS.		No justification for the recommendations given in the document.
Year N/A			
Author	Training in hospital or community medicine in posts approved by the Joint Committee, including not less than 6 months or more than 12 months full-time employment in each of two of the following specialties:		
Report produced by JCPTGP	- general medicine		
Aim of report Overview of requirements for doctors who wish to train for general practice.	- geriatric medicine - paediatrics - psychiatry		
Training recommendation Yes	- one of A&E medicine; or general surgery; or A&E medicine and general surgery; or A&E medicine and orthopaedic surgery		
Delivery recommendation (yes/no) No	- any one of obstetrics or gynaecology or obstetrics and gynaecology. <u>Equivalent Experience</u> Total period of training should not normally be less than 36 months full time.		
Explicit volume/concentration implication	Applicant will normally be expected to demonstrate that they have acquired the equivalent of at least 6 months		

Training (yes/no) No Service (yes/no) No Research-based supporting evidence (yes/no) No	experience in at least two of the specialties listed in regulation. <u>General Medicine</u> For purposes of GP training general medicine posts must have given the post-holder exposure to acute, unselected, medical intake encompassing the broad generality of medicine and not constrained to any single or small group of specialties. General medicine should also expose the post-holder to the whole range of common medical emergencies. The on-call commitment should be no less than an average of four takes per month. A maximum of 12 months in general medicine will count towards certification. A maximum of 12 months experience will be accepted in the following specialties: General Surgery, Paediatrics and Psychiatry.		

Appendix 6 Productivity regression results

Variables and labels

teaching: Trust status dummy {0=non-teaching; 1=teaching)

consults: Number of consultants

train: Number of trainee staff

nccgs: Number of NCCG staff

con_train: Number of consultants*number of trainees

tt_cons: Trust status dummy*number of consultants

tt_train: Trust status dummy*number of trainees

tt_con_train: Trust status dummy*number of consultants *number of trainees

_cons: Constant/intercept term

Statistically significant variables are highlighted in bold

A Regression model for general surgery and urology

```
Source |       SS       df       MS              Number of obs =     165
-------------+------------------------------F(  8,   156) =   92.62
Model |  2.7289e+09     8   341110147           Prob > F      =  0.0000
Residual |   574520124   156  3682821.31           R-squared     =  0.8261
-------------+------------------------------      Adj R-squared =  0.8172
Total |  3.3034e+09   164  20142690.8           Root MSE      =  1919.1
------------------------------------------------------------------------------
fces |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
teaching |   4869.101   3753.795     1.30   0.197    -2545.724    12283.93
consults |   600.3973   87.69204     6.85   0.000     427.1803    773.6143
train |    220.612   44.42585     4.97   0.000     132.8582    308.3658
nccgs |   293.0372   75.97338     3.86   0.000     142.9679    443.1065
con_train |  -6.763966   3.124842    -2.16   0.032    -12.93643   -.5915052
tt_cons |  -312.1106   210.6036    -1.48   0.140    -728.1134    103.8921
tt_train |  -390.4979   146.6977    -2.66   0.009     -680.268   -100.7278
tt_con_train |   18.15342    6.75994     2.69   0.008     4.800593
31.50624
```

```
_cons |   28.61041   435.3287     0.07   0.948     -831.289    888.5098
------------------------------------------------------------------------------
Source |       SS       df       MS              Number of obs =     152
-------------+------------------------------F(  8,   143) =   43.04
Model |  107.659828     8  13.4574785           Prob > F      =  0.0000
Residual |  44.7168273   143  .312705086           R-squared     =  0.7065
-------------+------------------------------       Adj R-squared =  0.6901
Total |  152.376656   151  1.00911692           Root MSE      =   .5592
------------------------------------------------------------------------------
log_fces |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
teaching |   2.854256   1.106872     2.58   0.011     .6663103    5.042202
consults |   .3477987   .0305733    11.38   0.000     .2873647    .4082326
train |   .1636526   .0153826    10.64   0.000     .1332459    .1940593
nccgs |   .0508376   .0221985     2.29   0.023     .0069581    .0947172
con_train |  -.0136344   .0011892   -11.47   0.000     -.015985   -.0112838
tt_cons |  -.3006035   .0637212    -4.72   0.000    -.4265607   -.1746464
tt_train |  -.1613672    .043563    -3.70   0.000    -.2474778   -.0752566
tt_con_train |   .0138097   .0021143     6.53   0.000     .0096304   .017989
cons |   5.295873   .2082793    25.43   0.000     4.884168    5.707577
------------------------------------------------------------------------------
```

B Regression model for obstetrics and gynaecology

```
Source |       SS       df       MS              Number of obs =     165
-------------+------------------------------           F(  8,   156) =
50.92
Model |  4.9990e+09     8   624874980           Prob > F      =  0.0000
Residual |  1.9144e+09   156  12271542.1           R-squared     =  0.7231
-------------+------------------------------       Adj R-squared =  0.7089
Total |  6.9134e+09   164  42154636.6           Root MSE      =  3503.1
------------------------------------------------------------------------------
fces |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
```

```
teaching |   4892.492   2327.261     2.10   0.037      295.482    9489.502
consults |   1009.037   186.1385     5.42   0.000     641.3602    1376.714
train |     428.32   93.56908     4.58   0.000     243.4942    613.1459
nccgs |  -16.05003   155.8733    -0.10   0.918    -323.9446    291.8445
con_train |  -18.08725   6.055426    -2.99   0.003    -30.04846   -6.126047
tt_cons |  -613.8615   283.9623    -2.16   0.032    -1174.769   -52.95436
tt_train |  -737.1449   133.8759    -5.51   0.000    -1001.588   -472.7014
tt_con_train |   46.39639   9.671149     4.80   0.000     27.29309
65.49969
_cons |  -104.1172   730.2556    -0.14   0.887    -1546.582    1338.348
------------------------------------------------------------------------------

Source |       SS       df       MS              Number of obs =     150
--------+------------------------------           F(  8,   141) =   25.02
Model |  137.464484     8  17.1830605           Prob > F      =  0.0000
Residual |  96.8383182   141  .686796583           R-squared     =  0.5867
--------+------------------------------           Adj R-squared =  0.5632
Total |  234.302802   149  1.57250203           Root MSE      =  .82873

------------------------------------------------------------------------------

log_fces |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
teaching |   3.973005   1.186692     3.35   0.001     1.626995    6.319014
consults |   .4324471   .0502336     8.61   0.000     .3331387    .5317555
train |    .157405     .02406     6.54   0.000     .1098399    .2049701
nccgs |   .0048693   .0375749     0.13   0.897    -.0694137    .0791524
con_train |  -.0152805   .0017397    -8.78   0.000    -.0187198   -.0118412
tt_cons |  -.4632533   .1133915    -4.09   0.000    -.6874204   -.2390861
tt_train |  -.1893682   .0436053    -4.34   0.000    -.2755729   -.1031635
tt_con_train |   .0180509   .0034301     5.26   0.000     .0112698
.024832
cons |    5.60391   .2583293    21.69   0.000     5.093211    6.114609
------------------------------------------------------------------------------
```

C Regression model for paediatrics

```
Source |       SS       df       MS              Number of obs =     165
```

```
----------+------------------------------           F(  8,   156) =   39.91
Model |  1.3724e+09     8   171551731           Prob > F      =  0.0000
Residual |   670534689   156  4298299.29           R-squared     =  0.6718
---------+------------------------------           Adj R-squared =  0.6549
Total |  2.0429e+09   164  12457003.3           Root MSE      =  2073.2
------------------------------------------------------------------------------
fces |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------+-------------------------------------------------------------------
teaching |   345.7196   1180.695     0.29   0.770    -1986.493    2677.932
consults |   551.2013   106.3792     5.18   0.000     341.0717    761.3309
train |    212.194   34.84162     6.09   0.000     143.3717    281.0162
nccgs |    260.692   63.34373     4.12   0.000       135.57    385.8141
con_train |  -17.81565   2.372656    -7.51   0.000    -22.50233   -13.12897
tt_cons |  -284.3543   134.2023    -2.12   0.036    -549.4424   -19.26614
tt_train |  -123.7176   60.75741    -2.04   0.043     -243.731    -3.70428
tt_con_train |   16.55696   2.891393     5.73   0.000     10.84563
22.2683
cons |   852.8244   421.5915     2.02   0.045     20.06002    1685.589
------------------------------------------------------------------------------
Source |       SS       df       MS              Number of obs =     150
----------+------------------------------           F(  8,   141) =   10.01
Model |  29.9811531     8  3.74764414           Prob > F      =  0.0000
Residual |  52.7911831   141  .374405554           R-squared     =  0.3622
---------+------------------------------           Adj R-squared =  0.3260
Total |  82.7723362   149  .555519035           Root MSE      =  .61189
------------------------------------------------------------------------------
log_fces |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
teaching |   .5056777   .5224356     0.97   0.335    -.5271417    1.538497
consults |   .1418282   .0357428     3.97   0.000     .0711671    .2124894
train |   .0520722     .01084     4.80   0.000     .0306423    .0735021
nccgs |   .0305556   .0188325     1.62   0.107    -.0066749    .0677861
con_train |  -.0046435   .0008275    -5.61   0.000    -.0062795   -.0030075
```

tt_cons | -.1085888 .0451459 -2.41 0.017 -.1978392 -.0193384

tt_train | -.0328549 .0210441 -1.56 0.121 -.0744576 .0087479

tt_con_train | .0042306 .0010266 4.12 0.000 .002201 0062602

cons | 7.412378 .1704209 43.49 0.000 7.075468 7.749289

D Regression model for general medicine

Source | SS df MS Number of obs = 165

----------+---------- F(8, 156) = 34.34

Model | 4.6264e+09 8 578302719 Prob > F = 0.0000

Residual | 2.6272e+09 156 16841285.2 R-squared = 0.6378

----------+---------- Adj R-squared = 0.6192

Total | 7.2537e+09 164 44229647.8 Root MSE = 4103.8

---

fces | Coef. Std. Err. t P>|t| [95% Conf. Interval]

----------+---

teaching | 19470.23 5348.13 3.64 0.000 8906.136 30034.32

consults | 235.8478 68.55725 3.44 0.001 100.4275 371.2681

train | 36.4791 77.8755 0.47 0.640 -117.3474 190.3056

nccgs | 107.6997 97.39941 1.11 0.271 -84.69217 300.0915

con_train | 6.595714 3.271782 2.02 0.046 .1330047 13.05842

tt_cons | -423.6995 136.6366 -3.10 0.002 -693.596 -153.803

tt_train | -208.2566 117.1028 -1.78 0.077 -439.5683 23.05508

tt_con_train | -2.13105 3.610388 -0.59 0.556 -9.262603
5.000504

_cons | 34.15272 1012.179 0.03 0.973 -1965.192 2033.498

Source | SS df MS Number of obs = 160

----------+---------- F(8, 151) = 21.52

Model | 150.598261 8 18.8247826 Prob > F = 0.0000

Residual | 132.11105 151 .874907618 R-squared = 0.5327

----------+---------- Adj R-squared = 0.5079

Total | 282.709311 159 1.77804598 Root MSE = .93536

---

log_fces	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
teaching	**3.828537**	**1.226533**	**3.12**	**0.002**	**1.405154**	**6.251919**
consults	**.1183221**	**.0172001**	**6.88**	**0.000**	**.0843382**	**.152306**
train	**.100506**	**.0187462**	**5.36**	**0.000**	**.0634673**	**.1375447**
nccgs	.0256563	.022202	1.16	0.250	-.0182103	.0695229
con_train	**-.0033045**	**.0007984**	**-4.14**	**0.000**	**-.0048819**	**-.0017271**
tt_cons	**-.1281365**	**.0319731**	**-4.01**	**0.000**	**-.191309**	**-.0649641**
tt_train	**-.1081338**	**.0273641**	**-3.95**	**0.000**	**-.1621997**	**-.0540679**
tt_con_train	**.0035325**	**.000871**	**4.06**	**0.000**	**.0018116**	**.0052534**
cons	5.785854	.2675106	21.63	0.000	5.257307	6.314401

E Regression model for trauma and orthopaedic surgery

Source	SS	df	MS	Number of obs =	165
				F(8, 156) =	123.58
Model	928306160	8	116038270	Prob > F =	0.0000
Residual	146480932	156	938980.335	R-squared =	0.8637
				Adj R-squared =	0.8567
Total	1.0748e+09	164	6553579.83	Root MSE =	969.01

fces	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
teaching	1778.957	1165.82	1.53	0.129	-523.8729	4081.787
consults	**454.6452**	**48.93724**	**9.29**	**0.000**	**357.9801**	**551.3103**
train	**139.1341**	**31.01715**	**4.49**	**0.000**	**77.8663**	**200.4019**
nccgs	**301.0801**	**41.0882**	**7.33**	**0.000**	**219.9191**	**382.2411**
con_train	**-5.429281**	**2.331762**	**-2.33**	**0.021**	**-10.03518**	**-.8233817**
tt_cons	**-384.4775**	**145.7875**	**-2.64**	**0.009**	**-672.4497**	**-96.50527**
tt_train	-78.66144	89.94833	-0.87	0.383	-256.3353	99.01237
tt_con_train	**11.83948**	**5.34494**	**2.22**	**0.028**	**1.281689**	**22.39728**
_cons	-117.898	245.4488	-0.48	0.632	-602.7299	366.9338

```
------------------------------------------------------------------------------
Source |       SS       df       MS              Number of obs =     155
----------+------------------------------           F(  8,   146) =   40.39
Model |  36.1040552     8   4.5130069           Prob > F      =  0.0000
Residual |  16.3114395   146  .111722188           R-squared     =  0.6888
-----------+------------------------------           Adj R-squared =  0.6718
Total |  52.4154947   154  .340360355           Root MSE      =  .33425
------------------------------------------------------------------------------
log_fces |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
teaching |   .9698756   .4176969     2.32   0.022     .1443621    1.795389
consults |   .1852893   .0210422     8.81   0.000     .1437027     .226876
train |   .0964749   .0135884     7.10   0.000     .0696195    .1233303
nccgs |   .0572059   .0141786     4.03   0.000      .029184    .0852278
con_train |  -.0075853   .0011145    -6.81   0.000    -.0097879   -.0053828
tt_cons |  -.1514243   .0518118    -2.92   0.004    -.2538222   -.0490263
tt_train |  -.0655714   .0321353    -2.04   0.043     -.129082   -.0020609
tt_con_train |   .0074451   .0019977     3.73   0.000     .0034969  .0113932
cons |   6.559083   .1414227    46.38   0.000     6.279583    6.838583
------------------------------------------------------------------------------
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