

# The European Board of Urology survey of current urological manpower, training and practice in Europe

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**Objective** To conduct a survey of urological manpower, training and current clinical practice throughout European Board of Urology (EBU) member, associate member and affiliated member countries.

**Methods** In 1998 a detailed questionnaire was forwarded to the secretary of each country's national association of urology, who then entered the data for their country in conjunction with that country's EBU delegates.

**Results** A response was obtained from all 22 countries and while some countries were unable to provide completed data, the result is the most detailed assessment to date of European urological manpower, training and practice. The mean ratio of urologist to population was 1:36 654 (range 1:15 150 to 1:184 210). Office-only urologists comprise 70% of practitioners in France and Germany and 30–40% in Austria and Greece. Although still few, the number of women urologists is increasing. While not uncommon, medical unemployment is currently not a problem for urologists. The duration of urological training among countries was similar (3–5 years), with 13 countries demanding a basic degree in

surgery, and 13 also using a compulsory exit examination for trainees. Only 10 countries have a system for recording continuing medical education credits. Modern facilities for urological practice are freely available in all countries and the greatest differences were in treatment rather than diagnosis. Urologists play a dominant role in renal transplantation only in Croatia, Denmark, France, Ireland and Spain; about half of adrenal surgery and less than half of paediatric urology is performed by urologists. Cooperation with gynaecologists in managing female incontinence, and with paediatric surgeons in paediatric urology, was rare.

**Conclusion** There is a wide variation in urological manpower and while the duration of training was uniform, basic differences need to be resolved. It is vital that urologists maintain an interest in areas in which they can make a major contribution. Pan-European organizations should make it a priority to address these issues.

**Keywords** European urology, resources, training, employment

## Introduction

The Union Europeene des Medecins Specialistes (UEMS) is a group of specialist doctors with the objective of advancing and harmonizing the quality of specialist medical practice in Europe, and the defence at an international level of the status of the medical specialist and of his/her professional role in society. The European Board of Urology (EBU) is a specialist section of the UEMS which in addition to these aims also has a primary role in the provision of a regulatory framework for urological practice and training.

In fulfilling its role in advancing and harmonizing urological practice throughout Europe, the EBU authorized a survey of manpower, training and current clinical practice. It was thought that there were substantial differences in these areas and in many cases these

international differences could be explained by various internal circumstances. An example is the prevalence, particularly in France and Germany, of 'office-urologists', who function totally in the community, providing primary care and referring only patients requiring more major urological care to hospital-based colleagues.

An important factor in the provision of optimal medical (including urological) services is the achievement of the appropriate numerical balance between medical specialists and the population they serve. Too few specialists results in unacceptable delay in the provision of clinical care and inadequate time for satisfactory doctor–patient interaction, trainee teaching and supervision. Too many specialists is wasteful of postgraduate training, increases health service expenditure, and in surgical specialities the dilution of work-practice hinders the acquisition and maintenance of surgical expertise.

The standards achieved by urological trainees throughout Europe are not uniform; this results from

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potential factors such as candidate selection, organization and quality of structured training, and the absence of an agreed qualifying standard. One of the aims of this survey was to study and document these factors, and to encourage improvements.

This latest EBU survey provides an international comparison, aimed at helping the various national urological associations assess issues relating to urological practice in their countries, and thus provide comparative data for discussion with health-care management.

## Methods

Included in the survey were all 17 EBU member countries, four associated members and one affiliated country (Table 1). A detailed questionnaire relating to urological manpower, training and clinical practice, compiled by the Manpower Committee in conjunction with the Residency Review Committee of the EBU, was circulated to all national urological association secretaries in May 1998. The deadline for the return of the data was 1 August 1998. The Chairman of the Manpower Committee collated the data and presented them to the EBU national delegates at their plenary session in November 1998. Amendments and additions to the data suggested by the delegates were noted, and a completed draft report was then returned to the national association secretaries for verification, completion or correction. The national population figures supplied were compared with those quoted by the European Statistical organization 'Eurostat', and where there was a difference of >0.5 million, the Eurostat figure was used.

## Results

Completed questionnaires were received from all the countries surveyed. Table 1 documents the data relating to manpower and associated issues. The current mean ratio of urologist to population for all countries is 1 : 36 654 (range 1 : 15 150 for Greece to 1 : 184 210 for Ireland). This ratio is also shown in Table 1 for a similar survey in 1995 of the (then) 15 EBU countries [1].

Office-only urologists account for >70% of urologists in France and Germany, 40% in Austria and 33% in Greece, but there are none or very few in the other countries. There are hospitals with only one qualified urologist in most countries. There was a trend towards more women urologists; at present only  $\approx$ 5% of urologists are women but they comprise 10–15% of urological trainees and about half of current medical students. Medical unemployment in some countries is a major problem and this was closely related to responses from such countries indicating that medical school intake

was not related to manpower needs. Retirement ages for urologists were consistently 60–70 years.

Table 1 also summarizes the responses relating to urological training, qualification and continuing education. There was a remarkable similarity in the duration of surgical (common trunk) and higher urological training internationally. In most countries 3–4 years of higher urological training was required before qualifying as a urologist, which on average was attained 12–15 years after entry to medical school. Only four countries (Belgium, Greece, Luxembourg and Malta) had no nationally organized training programme in urology. In 13 of the 22 countries a basic surgical degree is required for urologists, and 13 countries also use a compulsory 'exit' qualifying examination for urological trainees. Two further countries (Austria and the Netherlands) plan to use the EBU Fellowship examination (FEBU) for this purpose in the near future. In only 10 countries is there a system for recording and monitoring Continuing Medical Education (CME).

The survey of clinical urological practice (diagnostic and therapeutic; Table 2 and Table 3) showed only minor differences in the facilities available and in current standard diagnostic practice. There was a trend in countries well supplied with urologists for such urologists to adopt a more 'hands-on' approach to investigations such as ultrasonography and cysto-urethrography.

There was less uniformity in urological treatments and interaction with other specialists. Joint clinics with gynaecologists for couples with fertility problems are held in only 12 countries, while in 15 countries there was cooperation with gynaecologists in managing women with incontinence. However, in only one country (Denmark) was this practice common. It appears that most hospital urologists undertake major surgery for urological cancer, as the referral rate of this work to specialist urologists was very low. While in Belgium and Denmark >75% of major paediatric urological surgery is performed by urologists, in most countries it is considerably less than half. In only seven countries was cooperation with paediatric surgeons common.

The greatest difference was in the percentage of renal transplantations being performed totally by urologists, ranging from 100% in Croatia and Ireland, through >80% in Denmark, France, and Spain, to none in Belgium, Greece, Hungary, Malta, Norway and the Netherlands. Less variation was reported in adrenal surgery, with about half of such surgery being performed by urologists.

## Discussion

The survey reported is the result of the efforts by the EBU to assess current manpower, practice and training issues

**Table 1** Data relating to manpower and associated issues, and urological training

Data	Country																					
	A	B	DK	SF	F	D	GR	IRL	I	L	N	P	E	S	CH	NL	GB	CR	H	M	PL	CZ
Pop, millions	8	10	5	5	58.5	82	10.5	3.6	57.6	0.4	4.7	10	40	8.8	7	15.5	59	4.8	10.5	0.37	40	10
Urologists (n)	372	300	94	89	1000	3340	693	19	1865	18	70	240	1700	300	141	250	453	130	350	3	560	330
Ratio, 1: N (k)	21.5	33.3	55.3	57.3	58.5	24.6	15.1	184.2	30.5	22.2	67.1	41.6	23.5	29.3	49.6	62.0	130.2	36.8	30.0	123.3	71.4	30.3
1995*	37.5	40.0	76.3	82.5	75.0	50.0	–	232	17.5	–	–	40.0	36.3	–	52.5	71.3	132.5	–	–	–	–	–
Women (%)	10	5	1	8.5	1	6.6	<1	6	3.5	0	7	2	5	3	0	1	5	3	1	0	11	11
Office only (%)	40	1	2	10	75	72	33	0	10	0	8.5	11	5	8	0	0	1	6	28.5	0	11	22
Unemployed																						
Urologists (%)	0	0	0	0	0	0	4	0	13.4	0	0	0	<1	0	0	1	0	<1	<1	0	0	<1
Doctors (N or %)	800	5%	0	1%	1000	11.0k	7.8%	0	59k	0	0	0	2%	117	≈7%	<2%	≈0%	587	?	0	6%	230
Single urologist hosp (n)	8	0	18	17	?	416	6	2	?	6	≈12	10	0	20	18–20	17	42	4	All	0	12	18
Medical students																						
N (k)	16.2	10.0	5.0	0.4	3.58	82.3	12.0	0.44	50.0	0	2.5	2.5	?	4.5	2.9	11.6	1.5	?	6.4	0.09	12.0	8.36
Not native (%)	5	5	5	1	25	10	10	7	5		2	5		5	20	5	5		40	10	9	13
% women	50	50	55	67	50	33	25	55	58		50	60		50	60	55	50		47	50	66	60
Medical student number determined by†	4	4	1	3	1	2	4	2	2	4	3	1+2	1+2	2+3	2	?	4	2	2	2	2	1+2
Urological trainees																						
Number	70	28	18	9	120	413	112	11	500	0	25	40	250	60	20	47	150	10	25	2	500	139
Women (%)	30	17	16	33	?	14	1.5	9	≈3		20	5	15–20	20	10	14	20	10	0	0	20	11
Retirement age of urologist (years)																						
Hospital	–	65	70	65	65–68	65	65	65	65	65	67	70	70	65	65	65	65	65	65	61	65	62–65
Office	–	65	–	–	–	68	65–67	–	–	–	67	–	–	70	68	–	65	–	65	–	65	62–65
Urological training (years)																						
Common trunk	1.5	2	6	6	2	1	1	3–6	0	1–2	6	2	1	2	2	2	3	1.5	2	2	3	0.25
Higher	4	4	4	2	3	4–6	4	4–5	5	4–5	3	4	4	3–4	4	4	5	3.5	4	5	3	6.5
Entry med sch to end	14	13	17	14	13	14.5	12	15	11	12–13	13–15	14	>11	13	10	13–15	14	12	10	10	?	13
Structured training for specialities?	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Training programme in urology	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Training hospitals (n)	28	14	8	5	50	430	42	4	10	–	20	35	?	30	16	20	?	5	5	–	81	65
Basic surgical degree essential?	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes	Yes	No
Training‡	2	3	3	3	3	3	3	3	1		3	3	3	3	3	3	3	3	1	2	3	3
Selection¶	c	c	b+c	c	a	b+c	d	c	a+d		b+d	a	b+d	b+c	c	c+d	c	c	c	b+c	c	c
Applicants/post	2–3	1–2	3	2–3	1	170	?	5–15			0–2	3–5	2–3	2–4	3–4	2	30	5–8	5–6	2	2	2–3
Urological qualification by exam?	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes
CME recording	Yes	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes

Countries: Full member countries of the EBU: A, Austria; B, Belgium; DK, Denmark; SF, Finland; F, France; D, Germany; GR, Greece; IRL, Ireland; I, Italy; L, Luxembourg; N, Norway; P, Portugal; E, Spain; S, Sweden; CH, Switzerland; NL, The Netherlands; GB, United Kingdom. Associated member countries of the EBU: CR, Croatia; H, Hungary; M, Malta; PL, Poland. Affiliated member countries of the EBU: CZ, Czech Republic.

\* 1995 values from [1]. †, manpower needs; 2, medical school capacity; 3, other method; 4, no effective control. ‡1, academic; 2, clinical; 3, both. ¶ a, academic examination; b, academic examination + c or d; c, interview by representatives of hospital, university, lay people or urologists; d, other method.

as they relate to urology. The hope is that these data will provide national urological associations and healthcare administrators with a tool to enlighten discussions about advancing the quality of urological care delivered to that country.

Interestingly, the survey showed that little previous information was available in most countries surveyed and even the statistical organization of the European Union 'Eurostat' has only the most basic data about the numbers of specialists and healthcare facilities. The data

**Table 2** Data relating to urological clinical practice (diagnostic)

Data	Country																					
	A	B	DK	SF	F	D	GR	IRL	I	L	N	P	E	S	CH	NL	GB	CR	H	M	PL	CZ
<b>Urological investigation</b>																						
IVU	A/P	A	A	A	A	A/P	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A
Retrograde urography	P	P	A/P	A	P	P	A	A	P	P	P	P	P	A	P	P	P	P	P	A	P	P
CUG	A/P	A	A	A	A	P	A	A/P	P	P	A	P	P	A	P	A	P	P	P	A	P	A/P
<b>Interventional radiology</b>																						
Abdominal US	A/P	A	S	S	P	P	A	P/S	P	P	A/P	P/S	S	A	P	A/P	A	S	P	A	S	S
TRUS	P	P	A/P	P	P	P	A	P/S	P	P	P	A	A/P	A	P	P	P	P	P	A	A	P
CT	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
MRI	A	A	S	A	A	A	A	A	S	A	A	S	A	A	A	A	A	A	A	A	A	S
Scintigraphy	A	A	S	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Laboratory investigations</b>																						
Biochemistry	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
PSA	A	A	A	A	A	A/P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Testicular	A	A	A	A	A	A/P	A	A	A	A	A	A	A	S	A	A	A	A	A	A	A	A
Hormones	A	A	A	A	A	A/P	A	A	A	A	A	A	A	S	A	A	A	A	A	A	A	A
Microbiology	A	A	A	A	A	A/P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Urodynamics	S	P	A/P	P	P	P	P	P	P	P	P	P/S	P	A	S	P	A	S	P	A	S	A/P

CUG, cysto-urethrography; US, ultrasonography. A, easily available; P, performed personally by urologists; S, only in specialist units.

presented here are 'soft', in that they relate to the responses from a few personnel (national association secretaries and EBU delegates), but these individuals occupy pivotal roles and are best placed to provide the best possible data for their country.

There can be no ideal international manpower ratio for a medical speciality. Changes in clinical practice and population demography dictate that the situation is in constant flux. In addition, differences among European countries in relation to patient demands, healthcare organization, medical education and speciality training mean that unique factors operate in each.

The mean ratio of one urologist per 36 654 population in Europe is still less than the 1:26 326 in the USA quoted by McCullagh [2]. However, fewer urologists are currently being trained in the USA than previously, as it is recognized that the clinical demands can be met with fewer urologists. A survey there has also shown that, despite more surgical procedures, the expansion in urological manpower has kept the annual workload at 119 operations per urologist [3]. Under these circumstances, there is a risk that many urologists will be unable to maintain their existing surgical skills.

In some European countries the presence of office-only urologists means that surgical cases are concentrated amongst the hospital urologists, whose mean ratio to population is 1:54 062. This ratio, when compared with that previously quoted for the USA and applied to the USA workload, gives a more 'respectable' 240 surgical

cases annually. It remains debatable if this is an optimal level for maintaining surgical competence, but limiting practice to specific interests (subspecialization) would help achieve this ideal.

While acknowledging that the unique clinical demands in certain countries dictate an increased allocation of clinicians, it is widely accepted that many countries have too many urologists. Decisions need to be made to begin to address this problem, as failure to do so will damage the status of the speciality. Conversely, there is patently a dearth of urologists elsewhere. In Great Britain, where there is currently one urologist per 130 000 of the population, the BAUS have a manpower target of one urologist to 80 000–100 000 population, and have succeeded in increasing consultant urological appointments to meet this target, with a plan to reduce trainee numbers when this target is met [4].

Ireland has the worst ratio of urologists to population (1:184 210) of all the countries surveyed. At present much urology, particularly in provincial areas, is dealt with by general surgeons. The need to appoint additional urologists is even more pressing as not only is the overall population increasing, but it is projected that those over 65 years old will increase from 11.4% to around 15% of the population over the next 20 years.

It is sensible that national urological associations should confront the national health systems to regulate the number and the quality of training offered to urologists. In addition, there should be only one route

**Table 3** Data relating to clinical practice (therapeutic)

Data	Country																					
	A	B	DK	SF	F	D	GR	IRL	I	L	N	P	E	S	CH	NL	GB	CR	H	M	PL	CZ
<b>Urological treatments</b>																						
Radiotherapy	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Andrology	P	P	S	S	S	P	P	P	P	P	S	S	P	P	P	S	S	S	S	S	P	S
Male infertility	P/S	P	S	S	P/S	P	P	P	P	P	S	S	S	S	S	S	S	S	S	P	S	S
Joint clinics with gynaecologists?	Yes	No	Yes	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	Yes
Assisted fertilization available?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Major cancer surgery	P/S	P/S	S	P	P/S	P/S	P/S	P	P	P	S	P	P	P/S	P/S	P/S	P	S	S	P/S	P	S
%referred to specialist centre	30	15	>50	50	?	25	5-10	1	?	≈1	?	10	10-20	10	10	10-20	10	50	40-60	5	10	80
Female incontinence	S	P	S	P	P/S	S	P	P	P/S	P	S	P	P	S	S	P/S	P	S	P	S	S	P/S
Cooperation with gynaecologists?	No	No	Yes	Yes	No	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Common?			Yes	No		No		No			No	No	No	No	No		No	No	No	0	No	No
<b>Pelvic floor physiotherapy/stimulation</b>																						
	S	P	A	A	P	P	A	S	P	A	A	S	S	A	S	A	A	S	NA	A	S	A
ESWL	S	S	S	P	P/S	P	S	P	P	P	S	S	S	P	P	P	S	S	P	P	S	S
PCNL	S	P	S	P	P/S	P	S	P	S	S	S	S	S	S	S	P	P	S	P	S	S	S
Laser therapy	S	P	S	P	S	P	P	P	S	NA	S	S	S	S	S	S	S	S	S	NA	S	S
Paediatric urology	P/S	P	S	A	S	P	S	S	S	P	A	S	S	S	A	S	S	S	S	S	S	S
% of major surgery performed by urologists	50	>75	>75	<25	<25	<25	<25	50-75	<25	<25	<25	<25	<25	25-50	25-50	<25	<25	<25	25-50	<25	<25	25-50
Cooperation with paediatric surgeons common?	No	No	No	No	Yes	No	No	No	No	No	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes
Renal transplantation	A	S	S	A	S	S	A	S	S	S	A	S	S	A	S	S	A/S	S	A	A	S	S
% totally by urologists	2	0	85	10	90	40	0	100	10	50	0	40	>90	<10	20	0	20	100	0	0	7	15
<b>Surgery</b>																						
Vascular access	A	S	A/S	A	P/S	A	A	S	A	S	A	S	S	S	A	A	A/S	S	S	A	A	A/S
Adrenal	P	S	S	P	P/S	S	P	P	P	P	S	P	P/S	A	S	S	S	S	S	S	S	S
% by urologists	50	80	100	50	10	>1	90	80	50	90	50	25	>50	10	30	25	25	50-80	70	5	10	100

NA, not available; A, easily available; P, performed by all/most urologists; S, performed mainly by specialist urologists.

to achieving certification as a urologist, and the auditing of manpower should be an ongoing process.

The trend toward more women urologists also affects manpower and training. Job-sharing and leave for family reasons, even in this liberated age, is likely to be more commonly adopted by women. This gender issue and its impact on manpower and training demands continuous review.

A disturbing finding is the apparently persistent acceptance of the 'one-urologist' department. Such urologists are isolated both professionally and personally, but more importantly their departments cannot provide their patients with the range of expertise and continuous care that should be their right.

The standard view of a urologist is one of a surgeon specializing in genitourinary conditions. In most coun-

tries worldwide this has not changed, but over the past 20 years the advent of more endoscopic and extracorporeal therapy, and the pharmacological management of conditions formerly managed surgically, has reduced the volume of surgery, particularly open surgery, undertaken by urologists. Such developments have undoubtedly contributed to the proliferation of 'office-only' urologists. Such urologists may be particularly useful in countries with no strong GP base, but this view may be too negative. Perhaps the office-only urologists deliver a more cost-effective and patient-centred level of care, not only for the more minor urological conditions requiring only outpatient assessment and management, but also in other 'surgical' cases, by initiating appropriate investigations and management at an earlier stage before referral to a hospital-based colleague.

In many countries the provision of office-only urologists would demand a major change in medical organization and patient behaviour, but even in these countries this change may be occurring covertly because of the overproduction of doctors and urologists, and through the practice of GPs developing an interest in specialist areas, e.g. erectile dysfunction or fertility problems.

There is a similar argument about urologists adopting a more active role in diagnostic methods. The survey results suggested that such is the case in countries where urologists are more plentiful. In favour of this trend is the increased awareness by the urologist of clinical factors and probable underlying pathology, making the urologist best placed to use studies such as ultrasonography and urography. The counter-argument refers to specialist radiologists providing the expertise to optimize diagnostic accuracy and to limit radiation exposure. In practice, technological advances have resulted in ultrasonography now being more widely and cheaply available to urologists; in general this has not resulted in conflict with radiology colleagues. However, it would be unwise for the urologist to attempt to monopolize urological imaging, as to do so may be at the expense of diagnostic accuracy and innovation.

The similarity in the duration of urological training in different countries was striking. Of course, a standard duration does not equate to a standard quality. Most countries conduct organized urological training programmes, and it is the hope and aim of the EBU that its process of assessment and recognition of training programmes will help to improve the overall training standards. Furthermore, the adoption of a standard recognized 'exit' examination should assist in achieving this goal. Again, the EBU, with its Fellowship examination, potentially meets this need. The acceptance of these measures has been, and will be, a slow process. There is a real fear in countries with well-regulated training and stringent qualification procedures that efforts at harmonization will mean a reduction in their standards. These countries must be convinced that this will not be the case.

Inevitably areas of urology such as infertility, female incontinence and paediatric urology lead to conflict and competition with other disciplines. Indeed, there are very

few countries where cooperation with other specialities is common. It is vital that urologists maintain an interest in areas to which they can contribute; failing to do so will not only be at the expense of patient care but inevitably denies trainee urologists exposure to such experience. In the case of paediatric urology, if the paediatric surgeon monopolizes this area, the quality of care available to the former paediatric urology patient presenting to the urologist in adulthood will be diminished by the obvious gap in training and experience. The creation of obligatory shared-residency programmes in paediatric urology would help to overcome this dispute and possibly enhance this subspeciality. It is hoped that the resolution of other disputes will stem from the clear demonstration that patients are best managed by urologists. However, unless urological trainees are exposed to the relevant training opportunities it will not be possible for the urologists of the future to achieve this.

In summary, it is barely a century since urology became a separate speciality from surgery [5]. It has developed at a different pace but broadly in the same direction in the various European countries. This survey documents the shared similarities but also the glaring differences between nations, and is an informed basis for the advancement and harmonization of the speciality.

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