

# World Wide Day Surgery Activity 2003

## IAAS Survey of Ambulatory Surgery

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### Abstract

A survey has been conducted among the member countries of the International Association for Ambulatory Surgery (IAAS) and some other countries in order to elucidate the day surgery activity. 37 procedures were specified by surgical name and international coding. Of these, most are well established day surgery procedures, but a few are at the cutting edge of the move from inpatient to ambulatory

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surgery. As well as data on day surgery activity, data about total surgical activity, organisation and reimbursement was collected. In comparison with former surveys from the end of the twentieth century, the percentage of day surgery has increased in all countries. The USA and Canada followed closely by the Scandinavian countries have the highest rate of day surgery. The reasons are discussed.

### Introduction

Over several years there has been focus on the movement of surgical procedures from an inpatient setting to an ambulatory setting. The quality benefits for patients and the economic/efficiency benefits for the hospitals and society are the background for the movement towards ambulatory care.

This move has been facilitated by the introduction of minimally invasive procedures and new anaesthetic techniques.

However the attitude to ambulatory surgery varies greatly amongst healthcare professionals within and between countries. The expectations given to patients also vary and thus patient satisfaction with ambulatory surgery also varies. These are two of the reasons why ambulatory surgery rates differ between countries and between hospitals in the same country.

One of the goals of the IAAS is to encourage the development of day surgery all over the world. A way to achieve this is to periodically measure day surgery activity in as many countries as possible. This allows countries to benchmark their activity against other countries and to assess their absolute and comparative growth in ambulatory surgery activity over a period of time.

IAAS surveys have been conducted since 1994 [1,2]

### The international surveys

Lathouwer and Poullier [1] started the international surveys as a collaboration between the IAAS (International Association for Ambulatory Surgery) and the OECD (Organization for Economic Cooperation and Development) and undertook two surveys in 1994-95 and 1996-97 using a basket of 20 surgical procedures. Since then the OECD has not found it worthwhile to investigate ambulatory activity within its member countries even though the increase in day surgery activity is still an important issue for the health authorities in the member countries (personal information).

It is a goal for the IAAS to measure and follow the development of ambulatory surgery worldwide [3]. However undertaking a large-

scale international survey is very time and resource consuming and this is why erefore there has been a long gap between the last and the present survey.

### Method

The original 20 procedures from the two first surveys have been supplemented by 17 more procedures. The reason for this is both to cover more surgical specialties (plastic surgery, vascular surgery, urology) than in the first surveys and also because there has been a development in procedures allowing surgery to be undertaken in an ambulatory setting, e.g. anti reflux surgery, laparoscopic assisted hysterectomy, TURP. The 37 procedures are shown in Table 1.

Each procedure is identified with its common professional name and with its code from both the ICD9CM classification system and the Nordic classification system NCSP.

The data relating to specific procedures should be interpreted taking into account general data about surgical activity, the data source and completeness, the organisation of day surgery facilities, the reimbursement system, and the coding system in each country or region. The datasheet to collect this supplementary data is seen in Table 2.

The survey was accepted at the General Assembly of the IAAS and sent to contact persons in all the IAAS member countries and also to some contact persons in other countries.

### Results

18 Countries or regions answered the survey. Details from the supplementary datasheet are seen in Table 3.

From these observations it should be noticed that in most countries day surgery activity is within public hospitals. In USA where the activity is very high, the percentage of private freestanding units is also very high.

Reimbursement systems are very different. In Italy and Spain, as well

**Table I** The procedures identified with their common name, the ICD9CM code and the NSCP code.

<b>Name of Procedure</b>	<b>ICD9CM Coding</b>	<b>NCSP Coding</b>	<b>Number of ambulatory cases</b>	<b>Number of inpatient cases</b>
Cataract surgery	13.1 – 13.	CJB – CJE		
Squint correction	15.0 – 15.9	CEB – CEW		
Myringotomy with tube insertion	20.01	DCA 20		
Tonsillectomy	28.2 – 28.3	EMB 10 – 20		
Rhinoplasty	21.8	DJ, DL		
Broncho-Mediastinoscopy	33.22 – 33.24, 34.22	UGC, GEA		
Surgical removal of tooth	23.1	EBA 10		
Endoscopic female sterilisation	66.2	LGA		
Legal abortion	69.51, 69.01	LCH00, LCH03		
Dilatation and curettage of uterus	69.02, 69.09	LDA00, LDA10, LCA10, LCA13, MBA00, MBA03		
Hysterectomy (LAVH)	68.51	LCD11		
Repair of cysto/ recto cele	70.5	LEF		
Knee arthroscopy	80.26	NGA11		
Arthroscopic meniscectomy	80.6	NGD01, NGD11		
Removal of bone implants	78.6	NBU, NCU, NDU, NDU, NDU, NDU, NGU, NHU		
Repair of deform.of foot	77.51 – 77.59	NH		
Carpal tunnel release	04.43	NDM09, NDM19		
Baker cyst excision	83.39	NGM39		
Dupuytrens contracture correction	82.12	NDF02, NDF12		
Cruciate ligament repair	81.43, 81.45	NGE35, NGE36, NGE45, NGE46		
Disc operations	80.5	ABC		
Local excision of breast	85.12	HAB00, HAB10, HAB40, HAB99		
Mastectomy	85.4	HAC		
Laparoscopic cholecystectomy	51.23	JKA21		
Laparoscopic antireflux surgery	44.64 – 44.66	JBC01		
Haemorrhoidectomy	49.43 – 49.46	JHB		
Inguinal hernia repair	53.0 – 53.1	JAB		
Circumcision	64.0	KGH10, KGH80		
Orchidectomy + -pexy	62.3 – 62.5	KFH00, KFH10, KFC		
Male sterilisation	63.7	KFD43, KFD46		
TURP	60.2	KED22		
Colonoscopy w/wo biopsy	45.23, 45.25	UJF32, UJF35		
Removal of colon polyps	45.42	JFA15, JFA17		
Varicose veins surgey	38.5	PHB10 – PHB14, PHD10 – PHD15		
Bilat: breast reduction	85.32	HAD30, HAD35		
Abdominoplasty	86.83	QBE00, QBE99		
Pilonoidal cyst excision	86.21	JHW99		

# Datasheet 1

## IAAS Survey of Ambulatory Surgery in the World

Name of contributor:

Country or region:

Contact address:

Data source:

Completeness of data:

Total number of surgical procedures in your country/region:

Total number of planned surgical procedures in your country/region:

Total number of emergency surgical procedures in your country/region:

Total number of day surgery procedures in your country/region:

How is day surgery organised in your country/region:

How is day surgery reimbursed in your country/region:

Your coding system:

as in the Scandinavian countries, there is a fee per case that in many procedures will be the same for inpatients as for ambulatory treated patients. This is mentioned as a very potent incentive in order to move activity from inpatient to ambulatory treatment. There is little or no incentive for a move in Germany and Portugal where reimbursement is significantly less for ambulatory surgery.

There is no doubt that the organisational structure and reimbursement systems are of great importance for day surgery activity [4]. This item has only peripherally been investigated in this study and it should be studied further in the future.

The activity data is shown in Tables 4 to 9. In the first 5 tables the procedures from the respective surgical specialties are shown, and in Table 9 the overall activity data is listed.

It should be mentioned that for Belgium and Poland the total number of procedures are admissions and not procedures and therefore the number is relatively high.

US and Canada has a very high percentage of day surgery procedures followed closely by the Scandinavian countries. It is interesting to

notice that countries having a very high rate of day surgery in some specialties may have significantly lower rates in other specialties.

## Discussion

Data collection from many countries is very difficult. It is dependent more on dedicated professionals having an interest in the field than on a systematic follow up from the national or regional authorities. Therefore the data must be considered "the best possible" in many countries who do not have a national database covering all health activities. Such a national database has been implemented in Denmark since 1977 and this has covered all hospital based activity for over ten years. It is very valuable for statistical purposes [5].

However, data collected from the same source over consecutive years can give a very reliable picture of the development within a country.

In comparison to the former surveys in 1994-95 and 1996-97 [1,2] there has been a marked increase in day surgery activity in most countries and most procedures. However, there are still great

**Table 3** Details given in the supplementary datasheet.

Country / region. Year of data collection	Data source	Completeness	Organisation	Reimbursement	Coding system
Australia 2003	National Hospital Morbidity Database	Almost 100 %	www.racs.edu.au	Medicare and private	ICD-10-AM
Belgium 2004	Insurance companies	Almost 100 %	Only in hospitals	Insurance	ICD9CM
Canada (Alberta region) 2002	Alberta Health	100 %	Mostly public hospitals	Public tax	ICD9CM
Denmark 2004	National data register	100 % - public hospitals	Mostly public hospitals	Public tax	NCSP
England 2003	NHS	?	Mostly public hospitals	Public tax	ICD9CM
Finland 2003	Hospital files	Only public hospitals	10 % private. Public inside hospitals	Tax + pr. fee	NCSP
France 2003	Bases pmsi publique et privee	?	Private and public	Tax and ?	ICD9CM
Germany 2003	Hospitals reports	Almost 100 %	Private 90 %	Insurance DRG	ICPM + DRG
Hong Kong 2003	CDARS from Hospital authority	Almost 100 %	Integrated in hospitals	Public tax	ICD9CM
Italy 2002	National ministry of health database	95 %	Mostly integrated in hospitals. Some private free standing	DRG	ICD9CM
Netherlands 2002	LMR database	100 % - public hospitals	Integrated in OR and dedicated units	Budget system	CvV (ICD9CM)
Norway 2003	SAMDATA, Sintef	100 %	Integrated in hospitals and some private	Fee pr. case	NCSP
Poland 2003	Statistical bulletin				
Portugal 2003	III National Survey	99 %	Mostly integrated in public hospitals	55-60% of DRG	ICD9CM
Scotland 2003	Scottish Morbidity Records I	100 %	OPCS4		
Spain (6 regions) 2003	CMBD, CMA	90 %	Integrated in public hospitals	DRG	ICD9CM
Sweden 2002	Socialstyrelsen	100 %	Integrated in OR and dedicated units	DRG	NCSP
US Medicare) 2003	Medicare	100 %	Most private free-standing units	DRG	ICD9CM

differences between countries. An example is illustrated in Fig. 1 where the data for a common procedure – inguinal hernia repair – is shown.

Organisational and reimbursement systems have a great impact on ambulatory surgery activity but also other factors like culture and tradition must be of importance.

Some new procedures in the armamentarium of day surgery are laparoscopic cholecystectomy, laparoscopic antireflux surgery and LAVH (laparoscopic assisted vaginal hysterectomy) where the differences also are big – from 0 % up to 50 % for cholecystectomy.

Even within individual countries the activity varies much [6,7]. It may also depend on the variation in organisation where some hospitals have dedicated units or even free standing units for day surgery while

others have the day surgery activity integrated in inpatient wards and operating theatres.

The tradition and culture within a country may also have an influence on the rate of elective and emergency surgery. In some countries with long waiting lists procedures may become acute before surgery while in other countries with short waiting lists they are elective cases. Therefore, the percentage of total day surgery activity has been compiled from the total surgical activity and not from the number of planned procedures.

Attention should also be drawn to the fact that registrations of activity may be different in different countries and therefore the activity numbers are difficult to compare from one country to another.

**Table 4** Percentage of day surgery procedures ENT, ophthalmic and oral surgery.

	<b>Myringotomy</b>	<b>Tonsillectomy</b>	<b>Rhinoplasty</b>	<b>Broncho- mediastinoscopy</b>	<b>Cataract surgery</b>	<b>Squint correction</b>	<b>Tooth removal</b>
<b>Australia</b>	82 %	4 %	22 %	48 %	89 %	80 %	92 %
<b>Belgium</b>	94.6 %	93.6 %	18 %	24.9 %	87 %	81 %	96.8 %
<b>Canada</b>	99 %	66.8 %	91.6 %	67.4 %	99.4 %	99.1%	94.8 %
<b>Denmark</b>	81 %	30 %	52.5 %	67 %	98 %	65 %	91.7 %
<b>England</b>	82 %	7 %	17 %	3.5 %	90 %	80 %	87 %
<b>Finland</b>	-----	24 %	-----	-----	91.5 %	-----	-----
<b>France</b>	90 %	20 %	9 %	32 %	45 %	19 %	52 %
<b>Germany</b>	61.4 %	18 %	16.6 %	85.8 %	42 %	46 %	96 %
<b>Hong Kong</b>	60.7 %	0.7 %	-----	14.5 %	53.5 %	31 %	-----
<b>Italy</b>	50 %	15.7 %	5.7 %	22 %	62 %	21 %	58 %
<b>Nether- lands</b>	98 %	64 %	56 %	92 %	90 %		
<b>Norway</b>	87 %	28 %	64 %	27 %	93 %	50 %	96 %
<b>Poland</b>		ENT 0.9 %	Eye 4.7 %				
<b>Portugal</b>	15 %	9.2 %	1.5 %	-----	31 %	29 %	44.8 %
<b>Scotland</b>	61.4 %	18 %	12.6 %	85.8 %	42 %	46 %	5.9%
<b>Spain</b>	0-78 %	1-42 %	-----	1-10 %	42-90%	2-69 %	-----
<b>Sweden</b>	80 %	14.3 %	32.5 %	48 %	97 %	65 %	95 %
<b>USA</b>	98.6 %	89.2 %	94 %	34 %	99.7 %	85 %	----

**Table 5** Gynaecology.

	<b>Endoscopic Sterilisation</b>	<b>Legal abortion</b>	<b>Dilatation + curettage</b>	<b>LAVH</b>	<b>Cysto/recto cele</b>
<b>Australia</b>	86 %	89 %	86.4 %	0.1 %	1.5 %
<b>Belgium</b>	67.2 %	----	79 %	0.2 %	5.1 %
<b>Canada</b>	99.3 %	99.8 %	80.6 %	0	3.7 %
<b>Denmark</b>	90 %	97 %	86.9 %	3.1 %	7.3 %
<b>England</b>	84 %	-----	70 %	0.2 %	1 %
<b>Finland</b>	89 %	-----	-----	-----	-----
<b>France</b>	5 %	87 %	45 %	0 %	0 %
<b>Germany</b>	41.5 %	5.1 %	40 %	1.3 %	19.1 %
<b>Hong Kong</b>	-----	51.8 %	14 %	0 %	-----
<b>Italy</b>	22 %	84 %	33.5 %	0.1 %	1 %
<b>Netherlands</b>	93 %	90 %	69 %	0 %	0.5 %
<b>Norway</b>	52 %	97 %	73 %	1 %	4 %
<b>Poland</b>		Gynaecology	0.8 %		
<b>Portugal</b>	23.5 %	Not legal	34.8 %	0 %	-----
<b>Scotland</b>	41.5 %	75 %	40 %	1.3 %	19.1 %
<b>Spain</b>	0-73 %	0-2 %	-----	-----	6-50 %
<b>Sweden</b>	80.6 %	92 %	-----	1.4 %	1.7 %
<b>USA</b>	90.2 %	82.5 %	85 %	19.5 %	20.5 %

**Table 6** Orthopedics

	Knee arthroscopy	Arthroscopic meniscectomy	Removal Implants	Deformities of foot corrections	Carpal tunnel release	Baker cyst excision	Dupuytren contracture correction	Cruciate ligament repair	Disc surgery
<b>Australia</b>	63.2 %	81 %	61 %	19 %	86 %	34.8%	47.4 %	10.7 %	2.1 %
<b>Belgium</b>	69 %	79 %	75 %	41 %	93 %	37.8 %	84.5 %	14.7 %	1.9 %
<b>Canada</b>	94.9 %	97.7 %	85 %	72 %	99.5 %	87.6 %	94.4 %	62.7 %	10.2%
<b>Denmark</b>	92 %	91 %	83.5 %	72 %	78 %	76.4 %	86.6 %	55.7 %	1.6 %
<b>England</b>	65 %	70 %	-----	28 %	88 %	-----	42 %	-----	1 %
<b>Finland</b>	74 %	-----	-----	50.8 %	81 %	-----	-----	-----	-----
<b>France</b>	29 %	36 %	40 %	2 %	79 %	15 %	54 %	1 %	0 %
<b>Germany</b>	17 %	32.5 %	33 %	42.5 %	62.5 %	19 %	60 %	46 %	4.2 %
<b>Hong Kong</b>	14.6 %	6.8 %	-----	0 %	70.5 %	57.5 %	0 %	3.1 %	-----
<b>Italy</b>	32 %	28.7 %	35 %	20.5 %	73.5 %	52 %	48 %	2.2 %	2.5 %
<b>Netherlands</b>	93 %	92 %	64 %	27 %	95 %	57 %	81 %	5.1 %	0.4 %
<b>Norway</b>	76 %	88 %	60 %	61 %	83 %	79 %	42 %	22 %	6 %
<b>Poland</b>	Orthopedics	0.56 %							
<b>Portugal</b>	1.9 %	1.8 %	4.7 %	-----	39 %	-----	21 %	-----	0.8 %
<b>Scotland</b>	65.4 %	32.5 %	37 %	42.5 %	62.5 %	-----	38 %	55 %	4.2 %
<b>Spain</b>	-----	6-53 %	-----	3-59 %	13-88%	-----	-----	-----	0-0.6%
<b>Sweden</b>	88 %	93 %	51 %	45 %	79 %	79 %	64 %	-----	0.6 %
<b>USA</b>	93.9 %	96.7 %	75.9 %	95.2 %	97.3 %	84 %	97.6 %	82.1 %	5.7 %

Table 7 General surgery.

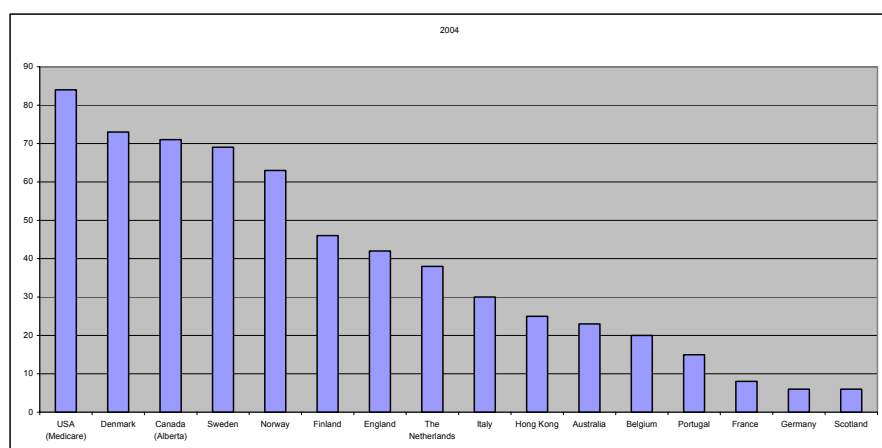
	Breast excision	Mastectomy	Lap. Chol.	Anti-reflux surgery	Haemorrhoidectomy	Hernia repair	Colonoscopy	Colon polyps removal	Pilonoidal cyst excision
<b>Australia</b>	65.1 %	8.6 %	2 %	0.3 %	62 %	22.6%	89.4	91.8%	29.7 %
<b>Belgium</b>	58 %	3 %	1.2%	0.1 %	29.1 %	19.9%	69 %	74.8%	33.6 %
<b>Canada</b>	92.6 %	8.8 %	43.9%	1.3 %	78 %	71.2%	92.8 %	97.6%	77.4 %
<b>Denmark</b>	45.3 %	7.2 %	18.8%	6.1 %	82 %	73 %	92.9 %	94.4%	91 %
<b>England</b>	-----	2 %	3 %	-----	18 %	42 %	86 %	-----	34 %
<b>Finland</b>	16.5 %	-----	10.3%	-----	14.7 %	46 %	-----	-----	-----
<b>France</b>	24 %	7 %	0 %	0 %	6 %	8 %	67 %	73 %	10 %
<b>Germany</b>	35 %	8.7 %	0.5 %	3.2 %	19.5 %	6 %	90 %	85 %	99 %
<b>Hong Kong</b>	58 %	0.2 %	5 %	0 %	38 %	24.6%	61 %	57 %	22 %
<b>Italy</b>	64 %	1.8 %	1.6 %	1 %	16.6 %	29.6%	26 %	39 %	64 %
<b>Netherlands</b>	41 %	0.4 %	2 %	0 %	53 %	38 %	-----	98 %	14 %
<b>Norway</b>	46 %	12 %	12%	6 %	73 %	63 %	78 %	85 %	87 %
<b>Poland</b>		General Surgery 2.2 %							
<b>Portugal</b>	28.7 %	1.1 %	1.2 %	-----	12.5 %	14.9%	-----	-----	28.8 %
<b>Scotland</b>	43 %	1.8 %	0.5 %	0 %	19.5 %	6 %	82 %	87 %	99 %
<b>Spain</b>	-----	-----	0-10%	0-11 %	2-42 %	6-52%	-----	-----	-----
<b>Sweden</b>	41 %	5.7 %	11 %	2.9 %	79.6 %	68.9%	80 %	87 %	92 %
<b>USA</b>	98.1 %	57.4 %	49.8 %	31 %	95.8 %	84.1%	86.3 %	77 &	91.6 %

Table 8 Urology, Plastic Surgery and Vascular Surgery.

	Circumcision	Testis surgery	Male sterilisation	TURP	Breast reduction	Abdominoplasty	Varicose veins surgery
<b>Australia</b>	87.1 %	44.7 %	95 %	1 %	8.8 %	9.8 %	20.5 %
<b>Belgium</b>	88 %	52 %	97 %	0.6 %	0.9 %	4 %	66 %
<b>Canada</b>	58.3 %	68.4 %	99.8 %	1.2 %	50.8 %	39.9 %	82 %
<b>Denmark</b>	92.9 %	63.7%	99.8 %	1.3 %	5.4 %	6.3 %	89.3 %
<b>England</b>	74 %	57.8 %	97 %	1 %	1 %	-----	54 %
<b>Finland</b>	75 %	-----	-----	1.9 %	-----	-----	56.7 %
<b>France</b>	82 %	29 %	0 %	0 %	1 %	1 %	17 %
<b>Germany</b>	53.6 %	39 %	84.8 %	3.2 %	3 %	40 %	30.5 %
<b>Hong Kong</b>	72 %	17.6 %	-----	0.3 %	----	-----	4.8 %
<b>Italy</b>	56 %	18.2 %	58 %	0.4 %	2.1 %	17.8 %	40 %
<b>Netherlands</b>	96 %	63.7 %	97.5 %	0.7 %	0.3 %	15 %	69 %
<b>Norway</b>	86 %	38 %	99 %	0 %	54 %	53 %	79 %
<b>Poland</b>		Urology 4.6 %					
<b>Portugal</b>	41.9 %	29.7 %	-----	0 %	-----	-----	13.3 %
<b>Scotland</b>	53.6 %	46 %	84.8 %	3.2 %	3 %	40 %	30.5 %
<b>Spain</b>	34-94 %	-----	50-99 %	-----	0-1.8 %	0-15 %	19-52 %
<b>Sweden</b>	89 %	41 %	98.7 %	1.3 %	4.2 %	5.5 %	80.8 %
<b>USA</b>	88.5 %	67.2 %	94.8 %	23.1 %	80.6 %	24.1 %	88.2 %

**Table 9** Day surgery as percentage of surgical procedures (overall) and of the procedures in the basket.

	Total number of procedures	Planned procedures	Emergency procedures	Day surgery procedures	Percentage of total surgery	Percentage of basket
Australia 2003	2.418.316	1.960.399	355.194	979.165	40.5 %	74 %
Belgium 2004	2.173.341 (admissions)			942.000	30 %	-----
Canada 2002	747.849			654.901	87 %	84.4 %
Denmark 2004	1.357.914			749.375	55.2 %	79.3 %
England 2003						62.5 %
Finland 2003	381.486	302.574	78.912	132.508	37 %	62.4 %
France 2003						44.9 %
Germany 2003	13.000.000			4.800.000	37 %	60.7 %
Hong Kong 2003						42.5 %
Italy 2002	4.479.845			1.286.823	29 %	41 %
Netherlands 2002	1.593.000	1.344.000	249.000	790.000	49.6 %	69.8 %
Norway 2003	375.000	300.000	75.000	180.000	48 %	68 %
Poland 2003	3.351.877 (admissions)				2.4 %	
Portugal 2003	428.647	315.642	113.005	46.111	10.7 %	18.5 %
Scotland 2003	959.446	619.884	259.928	373.242	39 %	66 %
Spain 2003					28 – 44 %	54 %
Sweden 2002	426.570				50 %	66.7 %
USA 2003 (Medicare)						83.5 %



**Figure 1** Inguinal hernia repair.

## Conclusion

It is of importance to follow the development of day surgery activity in as many countries as possible. Day surgery can offer high quality care in most cost effective manner. It can maximise the potential of frequently sparse health service resources. The present survey shows that day surgery activity still varies enormously. Thus, there remains a potential for better utilisation of healthcare resources by encouraging all to reach the day surgery activity of the best performers.

The IAAS will conduct more surveys in the future and will try to get data from more countries than at present. Future surveys will also study more intensively why there are so great differences in day surgery activity and in particular the role organisation, reimbursement and culture plays in these.

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Netherlands: D deJong  
 Norway: J Raeder  
 Poland: A Staniszewski  
 Portugal: P Lemos  
 Scotland: B Kirby  
 Spain: J Marin  
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