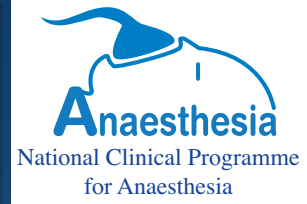




HEALTHCARE
PRICING
OFFICE



NCPA/HPO Annual Report 2014 & 2015

*General Anaesthetics,
Neuraxial blocks and Regional blocks,
Administered in Public hospitals
in Ireland in 2014 & 2015,
and captured in HIPE*

February 2017

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Foreword

This is the second NCPA/HPO Annual Report and presents the data for the years 2014 and 2015. The format and layout of this report is identical to that of the report for 2013¹ and the caveats of the 2013 report also apply to this report. The authors acknowledge that the report describes only part of the workload of anaesthetists. Areas such as pre-operative assessment, intensive care, transport of critically ill patients, on call commitments etc. are not included.

This report gives the number of general anaesthetics, neuraxial blocks and regional blocks administered in public hospitals in Ireland in 2014 and 2015 which are captured in HIPE. These data were retrieved from the national HIPE file by the HIPE team at the Healthcare Pricing Office (HPO) using specific search criteria developed for this purpose. In 2015 the classification used to code HIPE discharges was updated from ICD-10-AM 6th Edition to ICD-10-AM 8th Edition².

The report also includes data on patient gender, age and ASA status, the type of anaesthetic, the emergency or elective nature of the procedure and the type of procedure according to the Australian Classification of Health Interventions (ACHI). The data are set out in tables and graphs under these data field headings and are accompanied by some brief comments. For most fields the number of anaesthetics (Anaesthetic count) is described, while for two fields, Age and Gender, patient discharge numbers (Discharge count) are given. Some data from the 2013 report are also included so that trends or patterns occurring over the three year period can be examined.

For a small percentage of cases, (0.5%), no accompanying surgical procedure could be found on the date on which the anaesthetic was administered. This anomaly was first identified in the 2013 report and was explained following detailed scrutiny. In both reports the majority of these cases are neuraxial blocks given on the labour ward. They also include general anaesthetics given for Electroconvulsive therapy (ECT), procedures carried out shortly after midnight where the anaesthetic began before midnight, or simple errors in recording the correct date.

The methods used to retrieve and present the data are constantly reviewed and further refined where possible. For example HIPE collects up to 20 procedures per episode of care including anaesthetic and non-anaesthetic procedures. There is no flag to link a non-anaesthetic procedure to an anaesthetic procedure on an episode of care. The procedures accompanying the anaesthetic procedures for Table 6 have been determined by matching procedure dates. This method was updated in 2014 to give a more precise description of the procedure associated with the anaesthetic.

Donation or retrieval of organs following a diagnosis of brain stem death (ASA 6) is not routinely coded by HIPE. Although one HIPE office does have a longstanding agreement to record these procedures, HIPE cannot provide information on patients with an ASA 6 status on a nationwide basis. The body responsible for overseeing organ retrieval and transplantation in Ireland is Organ Donation and Transplant Ireland (ODTI). Information in this report on patients with an ASA 6 status was kindly provided by ODTI and the complete Annual reports are available at www.odti.ie

Finally, the report includes the results of the audit project launched in the 2013 report to examine standards of anaesthetic record completion by comparing data from Q4 2014 with data from Q4 2015.

Part 1:

Principal Data

Number and Type of anaesthetic

The total number of anaesthetics* administered in each of the three years is remarkably consistent (Table 1 & Fig 1). The small peak in 2014 is just 1.4% higher than 2015. The distribution by type of anaesthetic is also very consistent although there has been a small but steady increase in the number of regional blocks recorded over the three years.

This overall level of consistency is reassuring and would suggest that the HPO data retrieval method is sound.

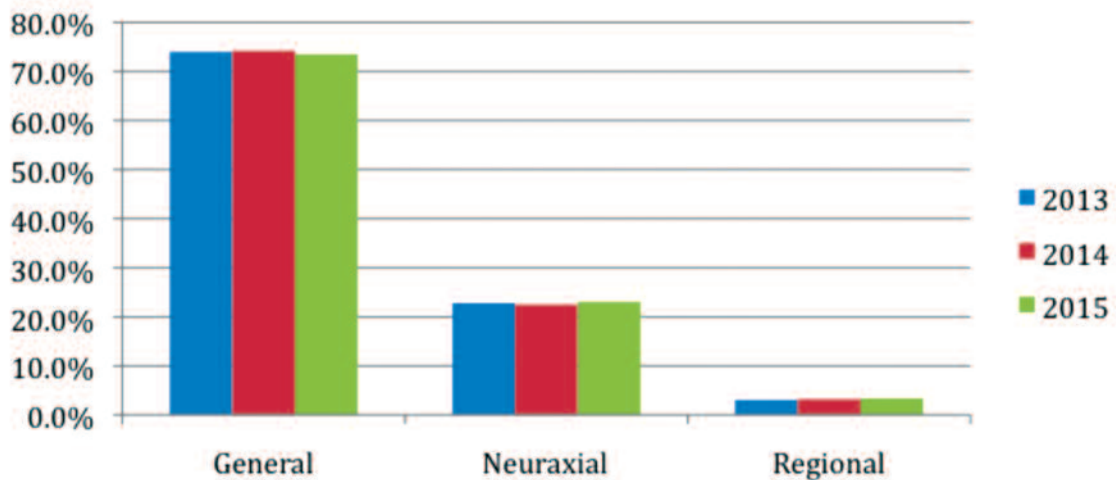
Table 1

Number of anaesthetics administered in 2013, 2014 & 2015 by Anaesthetic type

Year	2013	2014	2015
Anaesthetic type	Anaesthetic Count		
General	173,564	174,976	170,879
Neuraxial Block	53,565	53,075	53,609
Regional	7,312	7,623	7,900
TOTAL	234,441	235,674	232,388

Fig 1

Percent of anaesthetics administered in 2013, 2014 & 2015 by Anaesthetic type



*The total number of anaesthetics is the sum of all three types of anaesthetics administered. The Anaesthetic count exceeds the Discharge count because some patients had more than one anaesthetic at the same time (e.g. GA and Neuraxial block) or more than one anaesthetic during the same admission.

Gender

The ratio of male to female patients remains approximately 2:3 over the three years (Table 2 & Fig 2). The impact of obstetrics in this regard has been explained in the 2013 report and this pattern is repeated in 2014 and 2015.

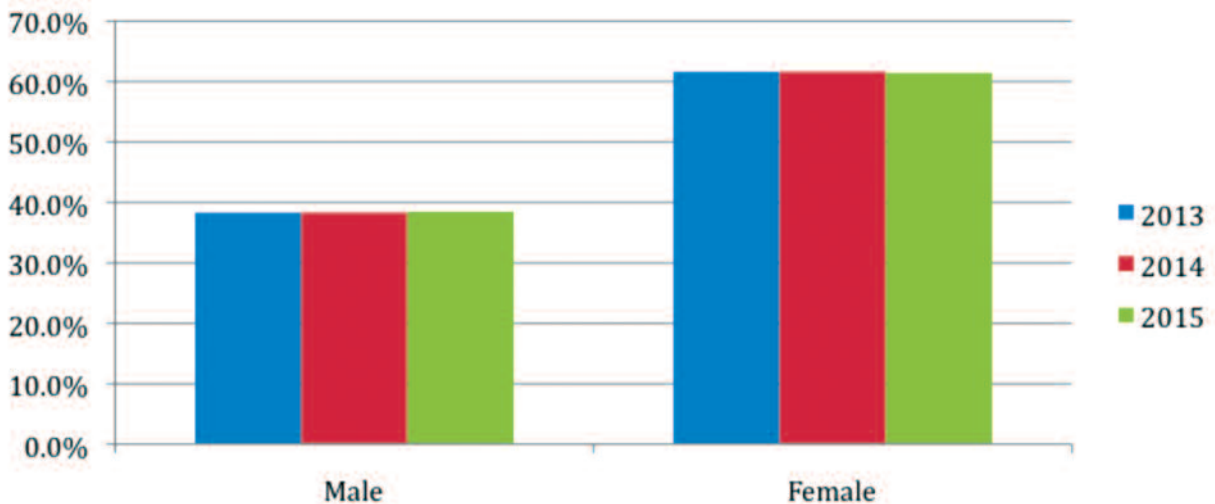
Table 2

Number of patient discharges reporting an anaesthetic procedure(s) in 2013, 2014 & 2015 by Gender

Year	2013	2014	2015
Gender	Discharge Count		
Male	85,593	86,104	85,257
Female	137,582	138,370	136,129
TOTAL	223,175	224,474	221,386

Fig 2

Percent of patient discharges reporting an anaesthetic procedure(s) in 2013, 2014 & 2015 by Gender



ASA Status

There has been a steady reduction in the number of anaesthetic record sheets presented to HIPE where no ASA status was indicated (ASA 9) and a corresponding increase in the number of ASA 2 and ASA 3 (Table 3 & Fig 3). This is an encouraging trend but the fact remains that 27% of anaesthetic record sheets do not indicate the patient ASA status.

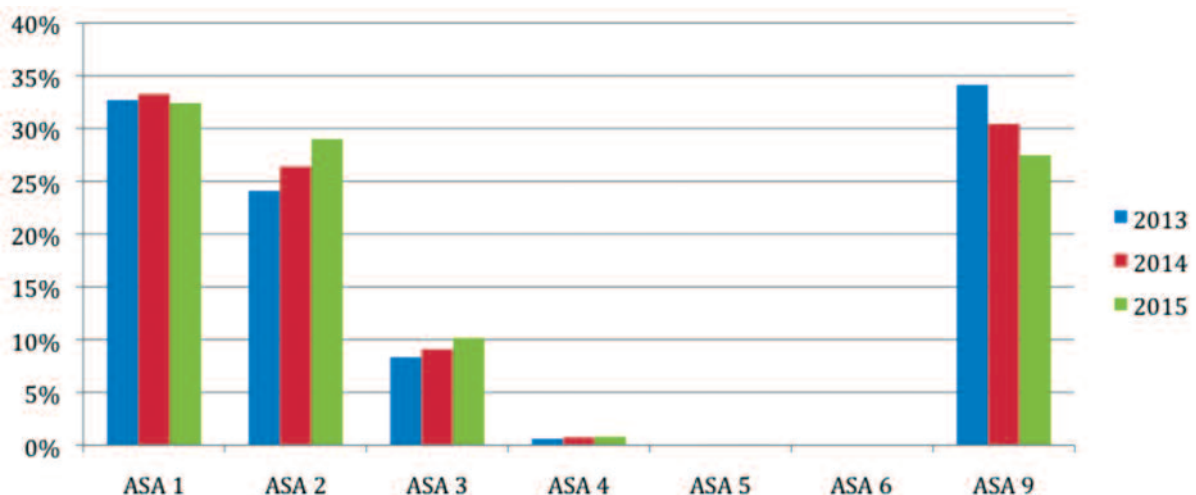
Table 3

Number of anaesthetics administered in 2013, 2014 & 2015 by patient ASA status

Year	2013	2014	2015
ASA status	Anaesthetic Count		
1 Normal healthy patient	76,699	78,387	75,351
2 Mild systemic disease	56,537	62,237	67,432
3 Severe systemic disease limiting activity	19,561	21,400	23,651
4 Severe systemic disease posing a constant threat to life	1,433	1,748	1,914
5 Moribund patient not expected to survive longer than 24 hrs without surgery	125	150	163
6 Brain stem death and organ donation for transplant	0	0	6
9 No documentation on ASA status	80,086	71,752	63,871 ←
TOTAL	234,441	235,674	232,388

Fig 3

Percent of anaesthetics administered in 2013, 2014 & 2015 by patient ASA status



Emergency/Non-emergency or not known

We know from published data³ that approximately 30% of anaesthetics are administered for emergency procedures. However HIPE data indicates that only 10% of anaesthetic record sheets indicate an emergency (table 4 & Fig 4). This must be seen as a serious deficit in the standard of anaesthetic record completion.

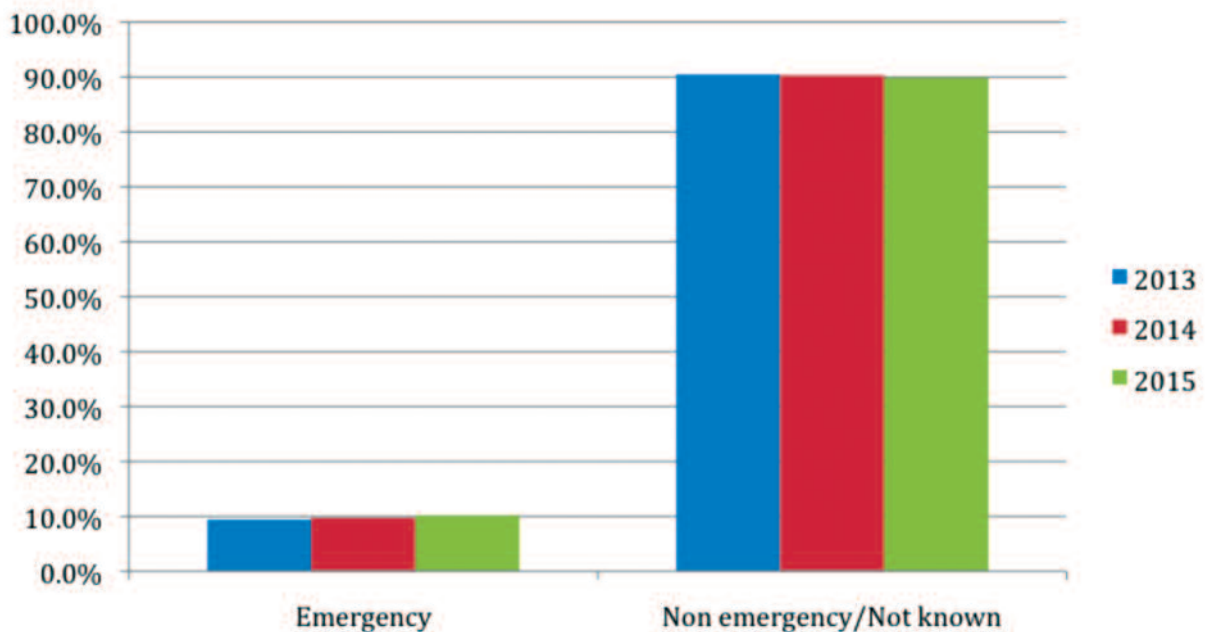
Table 4

Number of anaesthetics administered in 2013, 2014 & 2015 by Urgency of procedure

Year	2013	2014	2015
Anaesthetic Count			
Emergency	22,188	22,864	23,604 ←
Non emergency or not known	212,253	212,810	208,784
TOTAL	234,441	235,674	232,388

Fig 4

Percent of anaesthetics administered in 2013, 2014 & 2015 by Urgency of procedure



Age

Although the year on year changes are small numerically (table 5 & fig 5) there is a definite pattern over the three years with a decrease in the number of patients aged less than 36 years and an increase in the number of patients aged 36 and over.

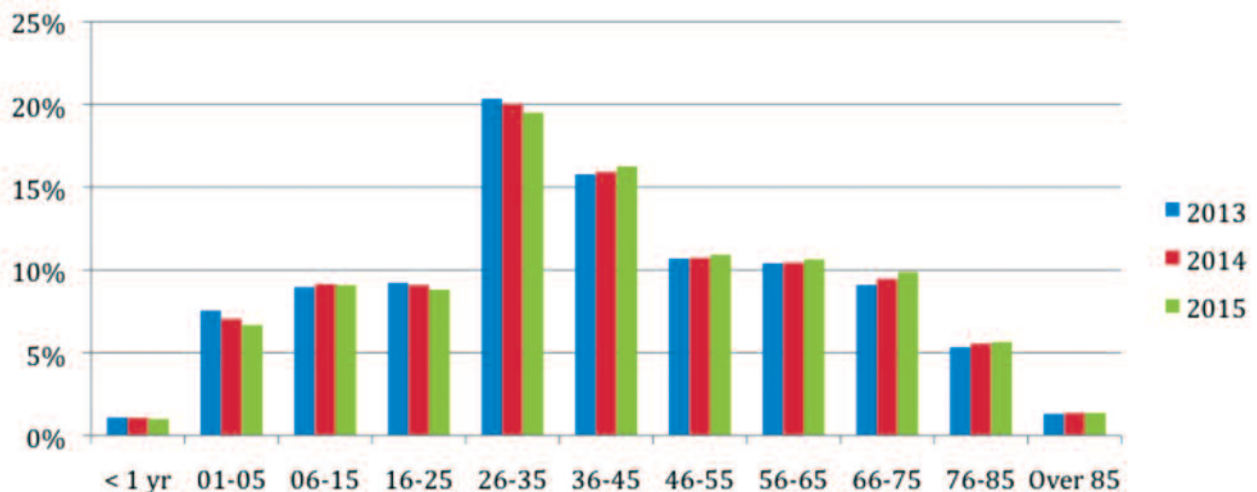
Table 5

Number of patient discharges reporting an anaesthetic procedure(s) in 2013, 2014 & 2015 by Age

Year	2013	2014	2015
Age categories (yrs)	Discharge Count		
Less than 1 yr	2,482	2,430	2,272
01 – 05 yrs	16,905	15,858	14,833
06 – 15 yrs	20,058	20,579	20,147
16 – 25 yrs	20,637	20,428	19,535
26 – 35 yrs	45,421	44,968	43,222
36 – 45 yrs	35,252	35,766	36,024
46 - 55 yrs	23,886	24,135	24,234
56 – 65 yrs	23,266	23,478	23,606
66 – 75 yrs	20,333	21,279	21,884
76 – 85 yrs	11,967	12,497	12,556
Over 85 yrs	2,968	3,056	3,073
TOTAL	223,175	224,474	221,386

Fig 5

Percent of patient discharges reporting an anaesthetic procedure(s) in 2013, 2014 & 2015 by Age



Australian Classification of Health Interventions (ACHI)

The majority of anaesthetics are given for procedures in four intervention chapters: Musculoskeletal, the Digestive system, Gynaecology and Obstetrics (Table 6).

Table 6

Number of anaesthetics administered in 2013, 2014 & 2015 categorised by Australian Classification of Health Interventions (ACHI)

Intervention Chapter	Anaesthetic Count		
	Year 2013	Year 2014	Year 2015
1 Procedures on the nervous system	5,278	5,469	5,244
2 Procedures on endocrine system	1,367	1,393	1,267
3 Procedures on eye and adnexa	7,230	7,610	7,472
4 Procedures on ear and mastoid process	4,643	4,500	4,472
5 Procedures on nose, mouth and pharynx	9,302	8,737	8,413
6 Dental services	5,595	6,154	5,646
7 Procedures on respiratory system	4,148	4,114	4,172
8 Procedures on cardiovascular system	8,672	8,294	8,422
9 Procedures on blood and blood forming organs	1,294	1,226	1,196
10 Procedures on digestive system	35,713	36,399	35,958
11 Procedures on urinary system	9,367	9,543	9,539
12 Procedures on male genital organs	7,536	7,335	7,003
13 Gynaecological procedures	24,236	24,584	23,911
14 Obstetric procedures	40,141	40,023	39,445
15 Procedures on musculoskeletal system	46,834	46,157	46,519
16 Dermatological and plastic procedures	12,121	12,820	12,305
17 Procedures on breast	4,559	4,816	4,855
18 Radiation oncology procedures	839	629	464
19 Non-invasive, cognitive and other interventions not elsewhere classified	3,027	3,123	3,291
20 Imaging services	1,740	1,870	1,798
No procedure on same date as anaesthetic procedure	790	938	996
TOTAL	234,441	235,674	232,388

Part 2:

Supplementary data for 2014 & 2015

ASA 6 Patient status

With one exception, HIPE offices do not record a patient status of ASA 6, which denotes a patient with a diagnosis of brain stem death whose organs are being retrieved for transplantation. However, anaesthetists have direct and significant involvement in all stages of the management of these cases so for this reason we have included some data supplied to us by Organ Donation and Transplant Ireland.

Data from Annual Reports of Organ Donation and Transplant Ireland for 2014 and 2015 indicate that 61 patients and 77 patients respectively had diagnoses of brain stem death and donated organs.

The numbers of Non heart beating organ donors is included for completeness sake.

Deceased Organ Donors			
Year	2013	2014	2015
Heart beating	80	59	77
Non heart beating	6	4	4
TOTAL	86	63	81

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Part 3: Audit Project

Standard of anaesthetic record completion by urgency of procedure

Part 3 of the 2013 Annual Report set out a simple audit project to examine standards of anaesthetic record completion. Recording of patients ASA status and of the urgency of the procedure on anaesthetic record sheets were used as a measure. In September 2015 and for the remainder of the year, the NCPA publicised this audit project and encouraged clinicians to pay particular attention to completion of anaesthetic record sheets in general, and to the documentation of patient ASA status and urgency of procedure in particular. Data from the final quarter of 2014 were then compared with data from the final quarter of 2015. The result shows that although there was a very small improvement, recording of emergency procedures remains well below 30% which we believe is the correct figure³. (Table 7& Fig 7)

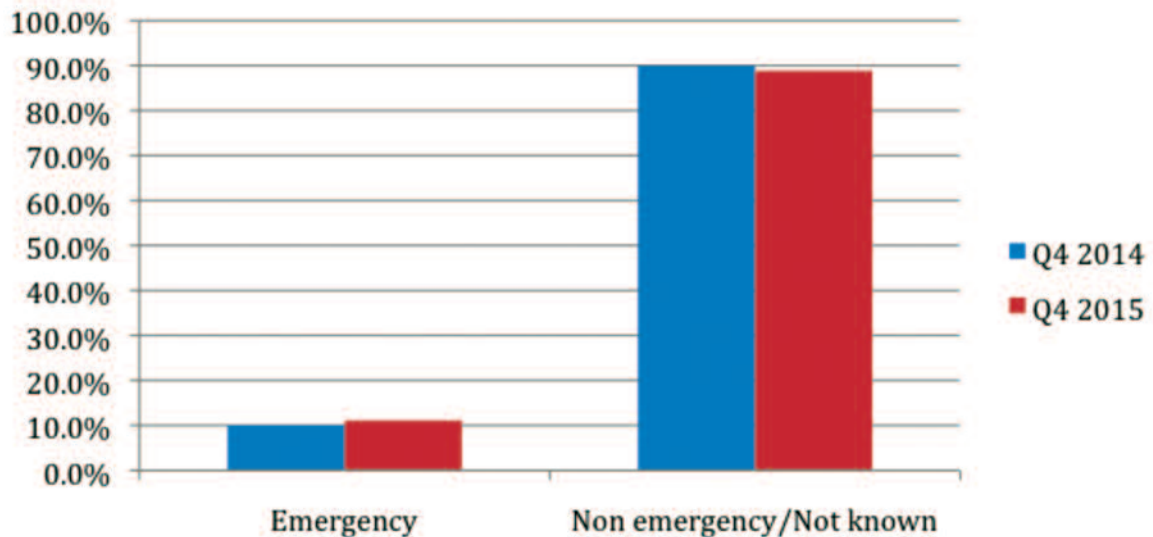
Table 7

Number of anaesthetics administered in Q4 of 2014 and 2015 by Urgency of procedure

Year	2014	2015
	Anaesthetic Count	
Emergency	5,777	6,353
Non emergency or not known	51,891	50,729
TOTAL	57,668	57,082

Fig 7

Percent of anaesthetics administered in the final quarters of 2014 and 2015 by Urgency of procedure



Standard of anaesthetic record completion by patient ASA status

The percentage of anaesthetic record sheets where no indication of patient ASA status was given (ASA 9) fell from 29.5% for Q4 2014 to 25.9% for Q4 2015 (Table 8 & Fig 8). Although this represents a definite improvement, nevertheless over 25% of anaesthetic record sheets still do not record patient ASA status.

Note: The Healthcare Pricing Office (HPO) does not report cells where the number of discharges is between one and five inclusive. In the table below such cells have been replaced by ~. Where further suppression is necessary to ensure that such cells are not disclosed it is necessary to suppress the cell with the next lowest discharges with *.

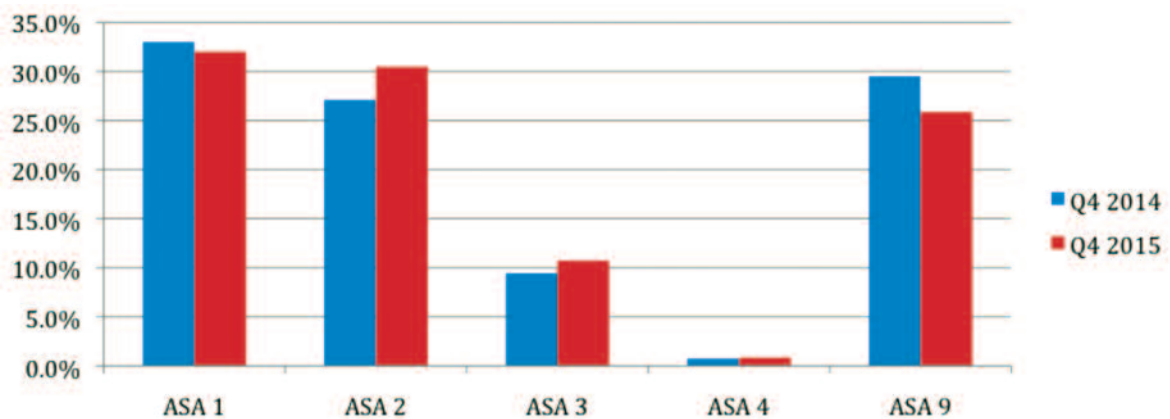
Table 8

Number of anaesthetics administered in Q4 of 2014 and 2015 by patient ASA status

Year	2014	2015
ASA status	Anaesthetic Count	
1 Normal healthy patient	19,041	18,266
2 Mild systemic disease	15,646	17,393
3 Severe systemic disease limiting activity	5,462	6,128
4 Severe systemic disease posing a constant threat to life	449	494
5 Moribund patient not expected to survive longer than 24 hrs without surgery	49	*
6 Brain stem death with organ donation for transplant	0	~
9 No documentation on ASA status	17,021	14,760
TOTAL	57,668	57,082

Fig 8

Percent of anaesthetics administered in Q4 of 2014 and 2015 by patient ASA status



Discussion & Conclusion

This Annual report completes the first cycle of reports and brings this project up to date. Work on the 2016 Annual report will begin in 2017 when data from individual HIPE offices around the country have been returned to the HPO. We fully expect that this pattern of reporting will continue into the future.

We believe that the Annual reports for the years, 2013, 2014 & 2015 contain simple, accurate and complete data and provide an interesting and informative overview of certain aspects of anaesthetic practice in Ireland. The consistency of the data also gives us confidence in our data retrieval methods.

Over the three years for which we have published data, a definite pattern has emerged in relation to the age of the patients we anaesthetise with a steady increase in the number of older patients. It is well known that the population is increasing in age generally but the impact this is having on anaesthesia has not been documented previously.

Accurate completion of anaesthetic records is crucial to patient safety and is a measure of adherence to best practice standards⁴. However, the reports highlight the fact that certain aspects of anaesthetic record completion are very poor and this is a cause of serious concern to the NCPA and the College.

In 2015, 27% of anaesthetic record sheets did not contain any information on patient ASA status (ASA 9) and just 10% of procedures were recorded as emergencies. We know from published data³ that approximately 30% of procedures are carried out as emergencies each year. The NCPA has drawn attention to the importance of good anaesthetic record completion through its hospital anaesthetic leads, through the NCPA Newsletter and by other means. The result of the subsequent audit is given in this report and while it demonstrates a reduction in ASA 9's from Q4 2014 to Q4 2015, clearly a positive finding, the fact remains that at best 25% of anaesthetic record sheets fail to report a patient ASA status. Just 10.0% of anaesthetic record sheets recorded the procedure as an emergency in Q4 of 2014. The figure for Q4 2015 was 11.1%

The Health Service Executive (HSE) Serious Reportable Events (SRE) Register⁵ records serious incidents which may result in death or serious harm to patients. Category 1e of the Register contains reports of “*intra-operative or immediate postoperative death in a patient with no known medical problems (ASA 1), occurring after surgery or other interventional procedure performed by a healthcare service provider*”. While crude numbers for such events undoubtedly help to focus our attention on patient safety, they need to be put in context by use of a reliable denominator – the total number of anaesthetics given to ASA 1 patients during the review period. The NCPA/HPO Annual Reports have the capacity to make a significant contribution in this regard but only when the number of ASA 9's recorded in HIPE has been drastically reduced.

Clearly the NCPA and the College must redouble their efforts to improve standards of anaesthetic record completion and NCPA/HPO Annual reports can provide a suitable audit tool to monitor any improvements.

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References

1. HPO/NCPA Annual report 2013. General anaesthetics, neuraxial blocks and regional blocks administered in public hospitals in Ireland in 2013 and captured in HIPE. hse.ie/anaesthesia – publications
2. National Centre for Classification in Health (NCCH), 2013: The Australian Classification of Health Interventions (ACHI) Tabular List of Interventions. Sydney: NCCH, Australian Health Services Research Institute, The University of Wollongong
3. W. R. Jonker, D. Hanumanthiah, T. Ryan, T. M. Cook, J. J. Pandit⁵ and E. P. O’Sullivan
Who operates when, where and on whom? A survey of anaesthetic-surgical activity in Ireland as denominator of NAP5 and on behalf of the NAP5 Steering Panel. *Anaesthesia* 2014; 69: 96 – 68
4. Good Practice. A guide for departments of anaesthesia, critical care and pain management. RCA & AAGBI third edition 2006
5. Special Report. Serious Reportable Events. Available at hse.ie/eng/services/publications/performance-reports/sept15ser.pdf

