



PROFESSIONAL RELATIVITIES STUDY

**RESOURCE MATERIAL P**

**Consensus Group summary status reports**

*23 statistical summaries for the 23 confirmed Consensus  
Groups data sets presenting: summaries of times,  
intensities, rankings and relative value implications.*

***Part 1:***

GP & EM  
Oral & Maxillo-Facial Surgery  
O&G and IVF  
General Surgery  
Cardio Thoracic Surgery  
Neurosurgery  
Orthopaedic Surgery  
Paediatric Surgery  
Plastic Surgery  
Urology

***prepared for***

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Medicare Schedule Review Board  
December 2000

**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

## **General Practice & Emergency Medicine**

### **Summary Status Report**

**January 2000**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

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This document outlines the results of an examination of the information sent to the NCCH by the General Practice & Emergency Medicine Consensus Group.

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 331 items. These comprised 78 consultation items, 233 procedure items and 20 proxy anaesthetic items<sup>1</sup>.

Analysis of this information showed:

- The median ratio of General Practice & Emergency Medicine's procedure item intra time estimates to the observed theatre procedure times was 106.5%.
- The median ratio of General Practice & Emergency Medicine's proxy anaesthetic item intra time estimates to the observed theatre anaesthetic times was 65.4%.
- Consultation items were given a much higher average rank than both procedure and proxy anaesthetic items ( $p < 0.001$ ).
- The ranks given to link items were significantly lower than those given to non-link items ( $p < 0.05$ ).
- The ranks given to good map items were significantly lower than those given to poor / no map items ( $p < 0.01$ ).
- The maximum range in relative rates of pay<sup>2</sup> implied by the Group's rankings was 1 to 5.0.
- The imputed relative values (IRVs)<sup>2</sup> given to the consultation items were significantly greater than those given to both the proxy anaesthetic and procedure items ( $p < 0.01$ ).
- The imputed relative values given to link items were not significantly different from those given to the non link items.

- The good map items were given significantly lower imputed relative values than the poor / no map items (  $p < 0.05$ ).
- The correlation between the imputed relative values for General Practice & Emergency Medicine and the Medicare Benefits Schedule Fee was poor ( $R^2 = 52\%$ ).
- The correlation between the imputed relative values for General Practice & Emergency Medicine and CPT RV was also poor ( $R^2 = 59\%$ ).

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup>Proxy anaesthetic items have been devised in the Professional Relativities Study to enable the relative values for anaesthetic MBS items 17701 to 17799 to be evaluated in terms of time and intensity on the same basis as consultation and procedure items. It is not possible to do this for items 17701 to 17799 directly as they do not relate to single procedures. Instead the anaesthesiology group and, to a lesser extent, the GP/ Emergency Medicine Group have been asked to estimate times and intensities and rank the provision of anaesthetic services for a carefully chosen set of procedures. These proxy anaesthetic items are designed to give a good coverage of the working range of items 17701 to 17799 spread across procedure specialties with varying ratios of time to intensity.

<sup>2</sup>The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for General Practice & Emergency Medicine are set out in Table 2.1 together with associated standard deviations and ranges.

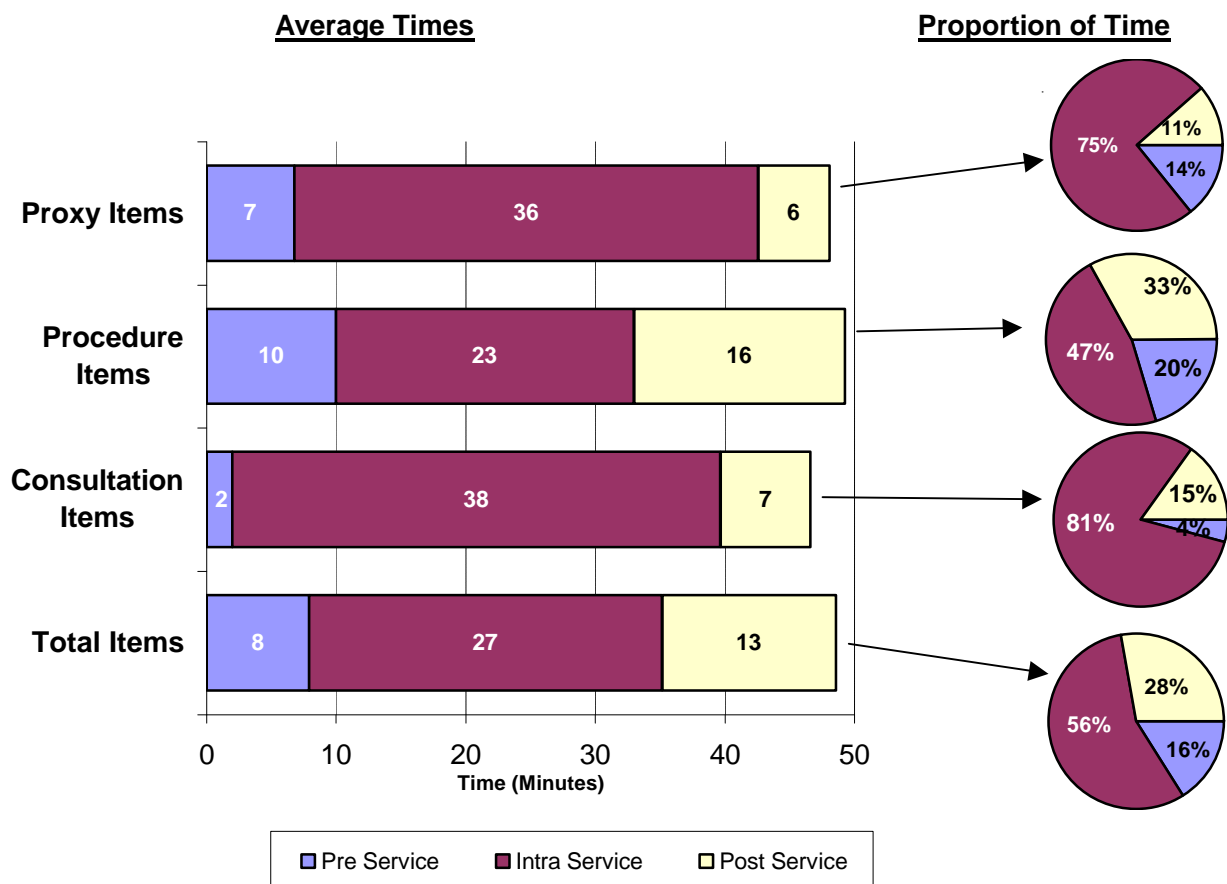
The mean intra service time was 27 minutes and the mean total time was 48 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
Mean	8	27	13	48
SD	5	21	11	28
Min	0	3	0	5
Max	30	140	60	210

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for proxy items, procedure items, consultation items and total items.

**Figure 2.1**



A summary breakdown is also provided in Table 2.2.

**Table 2.2**

<b>Average Times</b>	<b>Pre Service</b>	<b>Intra Service</b>	<b>Post Service</b>	<b>Total Time</b>
<b>Proxy Items</b>	6.8	35.9	5.5	48.2
<b>Procedure Items</b>	10.0	23.0	16.3	49.3
<b>Consultation Items</b>	2.0	37.7	6.9	46.6
<b>Total Items</b>	7.7	27.3	13.4	48.4

General Practice & Emergency Medicine's procedure intra time estimates and General Practice & Emergency Medicine's proxy intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies. The median ratio of General Practice & Emergency Medicine's procedure item intra time estimates to the observed procedure times was 106.5% and the median ratio of General Practice & Emergency Medicine's proxy item intra time estimates to the observed anaesthetic times was 65.4%. Details are provided in Attachment 2.

## Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>3</sup>, technical skill<sup>3</sup>, stress<sup>3</sup> and total intensity for General Practice & Emergency Medicine are set out in Table 3.1 together with associated standard deviations and ranges.

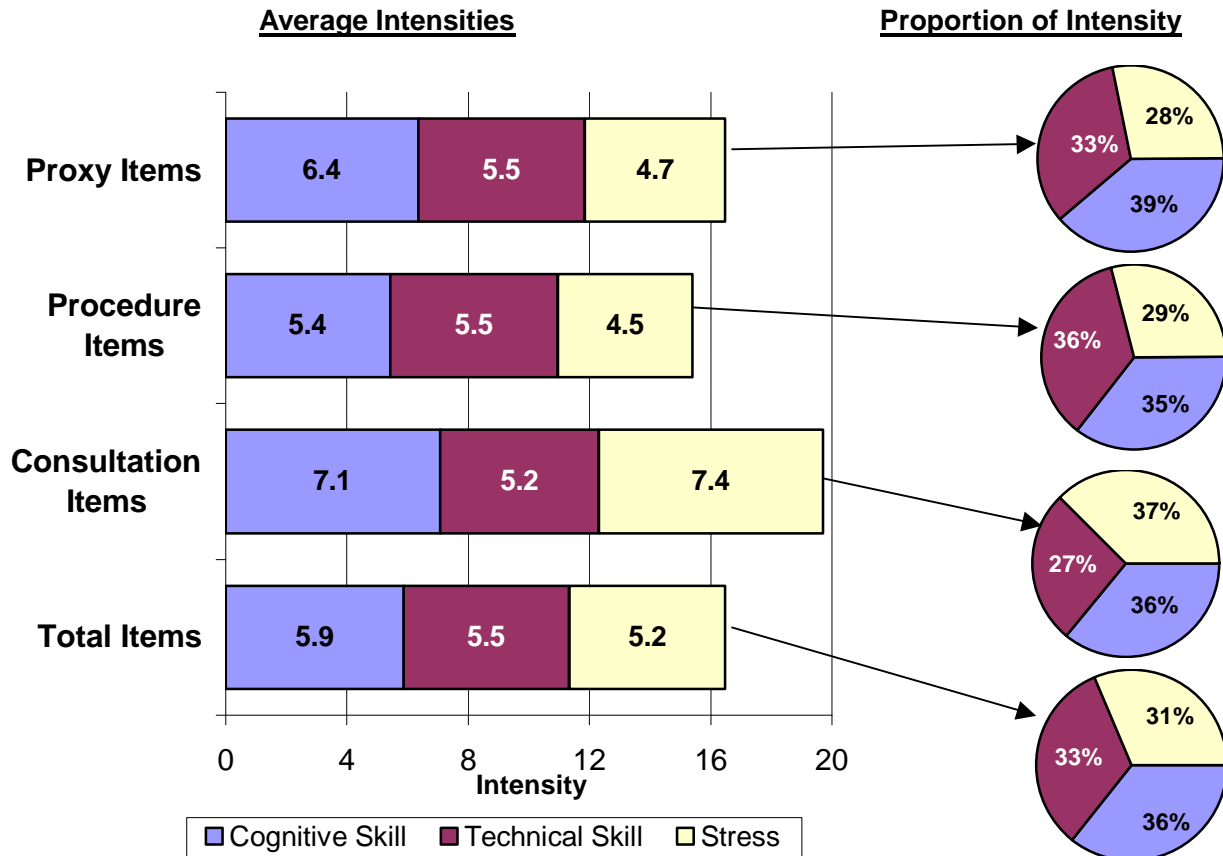
The mean ratings were 5.9 for cognitive skill, 5.5 for technical skill and 5.2 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
Mean	5.9	5.5	5.2	16.6
SD	1.7	1.8	2.3	4.8
Min	0.0	0.0	0.0	3.0
Max	10.0	10.0	10.0	30.0

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. These are provided for proxy items, procedure items, consultation items and total items.

**Figure 3.1**





A summary breakdown is also provided in Table 3.2.

**Table 3.2**

<b>Average Intensity Ratings</b>	<b>Cognitive Skill</b>	<b>Technical Skill</b>	<b>Stress</b>	<b>Total Intensity</b>
<b>Proxy Items</b>	6.4	5.5	4.7	16.6
<b>Procedure Items</b>	5.4	5.5	4.5	15.4
<b>Consultation Items</b>	7.1	5.2	7.4	19.7
<b>Total Items</b>	5.9	5.5	5.2	16.6

<sup>3</sup> Please note that intensity descriptions are abbreviations only.

- a) Cognitive Skill = Cognitive Skill, Clinical Judgement and Communication Skills
- b) Technical Skill = Technical Skill and Physical Effort
- c) Stress = Stress Due to Risk

## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (i.e. time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to consultation, procedure and proxy items is set out in Table 4.1. The consultation items were given a much higher average rank than both the procedure and proxy anaesthetic items (sum of ranks test,  $p < 0.001$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Consultation	78	16	326	130.4
Procedure	233	1	331	177.5
Proxy	20	2	308	170.3
<b>Total</b>	<b>331</b>	<b>1</b>	<b>331</b>	<b>166.0</b>

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. The General Practice & Emergency Medicine Consensus Group assessed 169 link items. These comprised 13 of their 78 consultation items, 136 of the 233 procedure items and all 20 of the proxy items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.2. The ranks given to link items were significantly lower than those given to non-link items (sum of ranks test,  $p < 0.05$ ).

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Consultation-Link	13	16	318	123.6
Procedure-Link	136	1	331	182.9
Proxy-Link	20	2	308	170.3
<b>Total Link</b>	<b>169</b>	<b>1</b>	<b>331</b>	<b>176.8</b>
Consultation-Non-link	65	17	326	131.8
Procedure-Non-link	97	9	319	170.1
<b>Total Non-Link</b>	<b>162</b>	<b>9</b>	<b>326</b>	<b>154.7</b>
<b>Total</b>	<b>331</b>	<b>1</b>	<b>331</b>	<b>166.0</b>

Good maps of General Practice & Emergency Medicine's items to CPT were available for 75 of their 331 items. A breakdown of the ranks given to these good map items and to the poor/no map items is set out in Table 4.3. The ranks given to the good map items were significantly lower than those given to the poor/no map items (sum of ranks test,  $p < 0.01$ ).

Table 4.3

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Good Map	75	8	331	197.7
Poor/No Map	256	1	330	156.7
<b>Total</b>	331	1	331	166.0

## Section 5 Relative Value Implications

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For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analysed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for General Practice & Emergency Medicine is 1 to 82.4.

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the range in relative rates of pay is 1 to 4.9. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the range in relative rates of pay is 1 to 5.0.

These ranges in relative rates of pay are higher than the median observed for specialties examined so far<sup>4</sup>. However, in terms of deviations in rates of pay, it should still be possible to align General Practice & Emergency Medicine's rankings and ratings with those of the other groups.

<sup>4</sup>The median range in relative rates of pay depending on intensity alone is 1 to 4.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.8.

Comparisons between consultation items, procedure items and proxy items, between link items and non-link items and between good map items and poor/no-map items in terms of imputed relative value (IRV) are set out in Table 5.1.

The IRVs given to the consultation items were significantly greater than those given to both the proxy anaesthetic and procedure items (ANOVA,  $p < 0.01$ ). There was no significant difference between the imputed relative values given to link items and those given to non-link items. The good map items were given significantly lower imputed relative values than the poor / no map items (t tests,  $p < 0.05$ ).

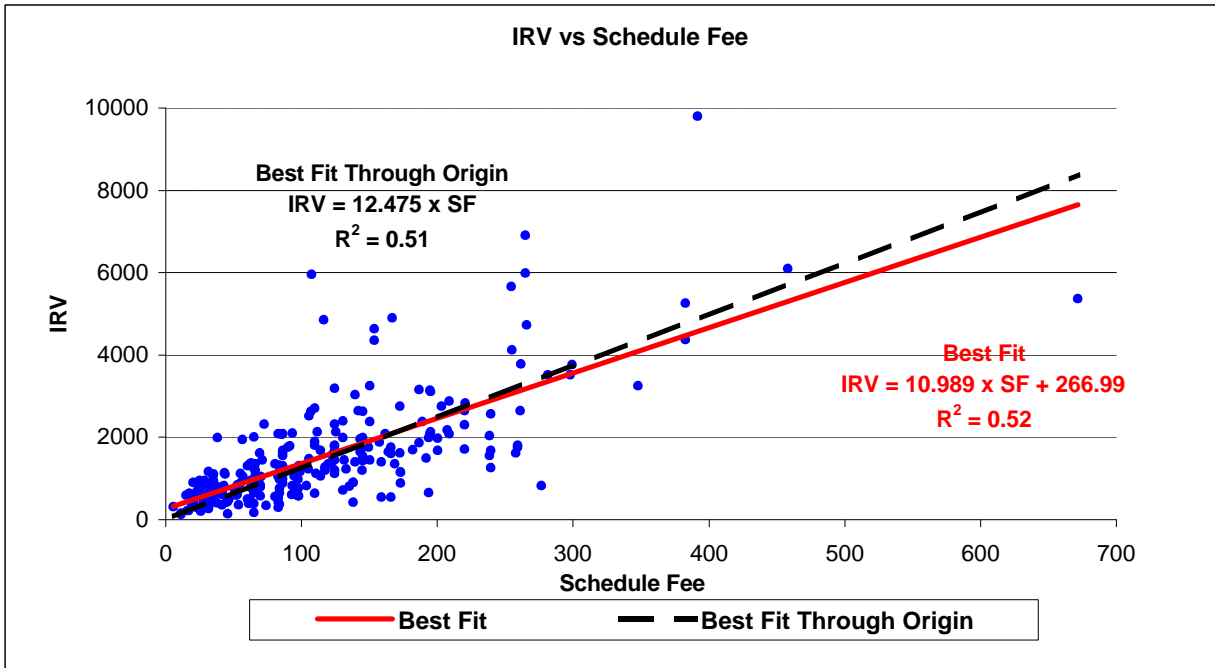
Table 5.1

Type of Item	Number Reviewed	IRVs		
		Mean $\pm$ SD	Low	High
<b>Consultation</b>	78	2023 $\pm$ 1153	208	4054.5
<b>Procedure</b>	233	1520 $\pm$ 1261	119	9800.0
<b>Proxy</b>	20	1819 $\pm$ 1777	380	6900.0
<b>Link</b>	169	1612 $\pm$ 1465	119	9800.0
<b>Non-link</b>	162	1703 $\pm$ 1073	208	4902.5
<b>Good Map</b>	75	1294 $\pm$ 1055	119	5250.0
<b>Poor/No Map</b>	256	1763 $\pm$ 1331	144	9800.0
<b>Total</b>	331	1656 $\pm$ 1287	119	9800.0

A plot of General Practice & Emergency Medicine's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is poor ( $R^2 = 0.52$ )<sup>5</sup> and there are eleven outliers which should be investigated. These comprise MBS item numbers 13857, 16515, 16518, 16519, 17980, 17983, 30405, 32003, 32004, 44324 and 47552.

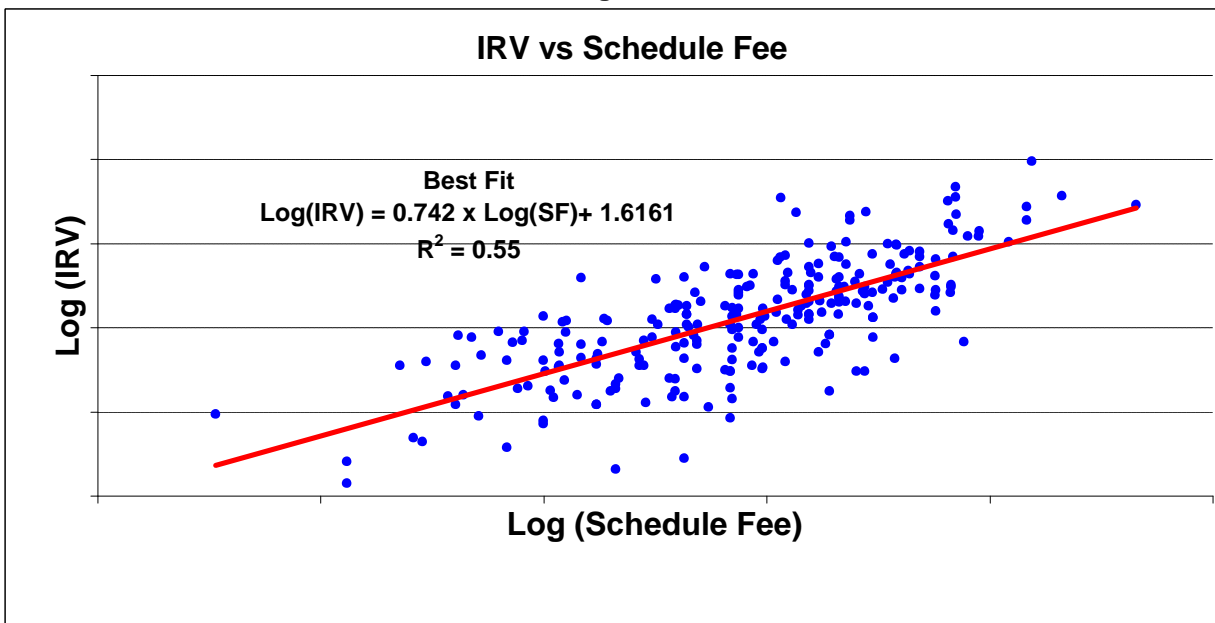
<sup>5</sup> An  $R^2$  value of 0.52 means that the line explains 52% of the variation.

Figure 5.1



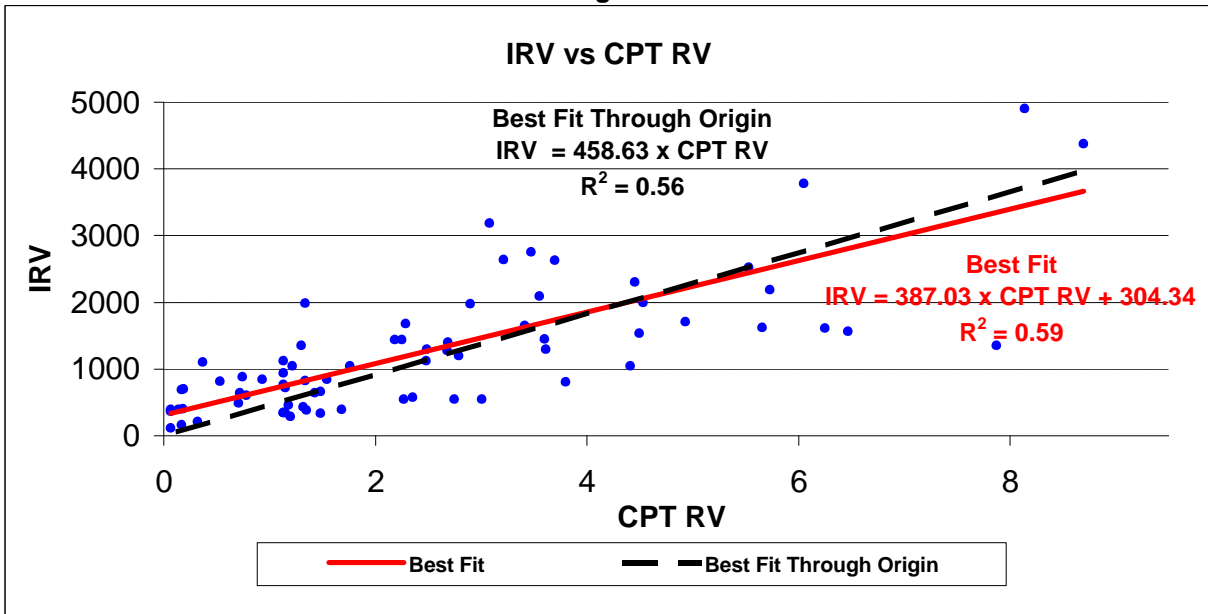
We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit explains 55% of the variation as against 52% previously. There are again eleven outliers which should be investigated. These are MBS item numbers 18266, 18270, 30406, 47423, 47444, 47453, 47466 and 47474, in addition to 13857, 16515 and 47552, which were mentioned previously.

Figure 5.2



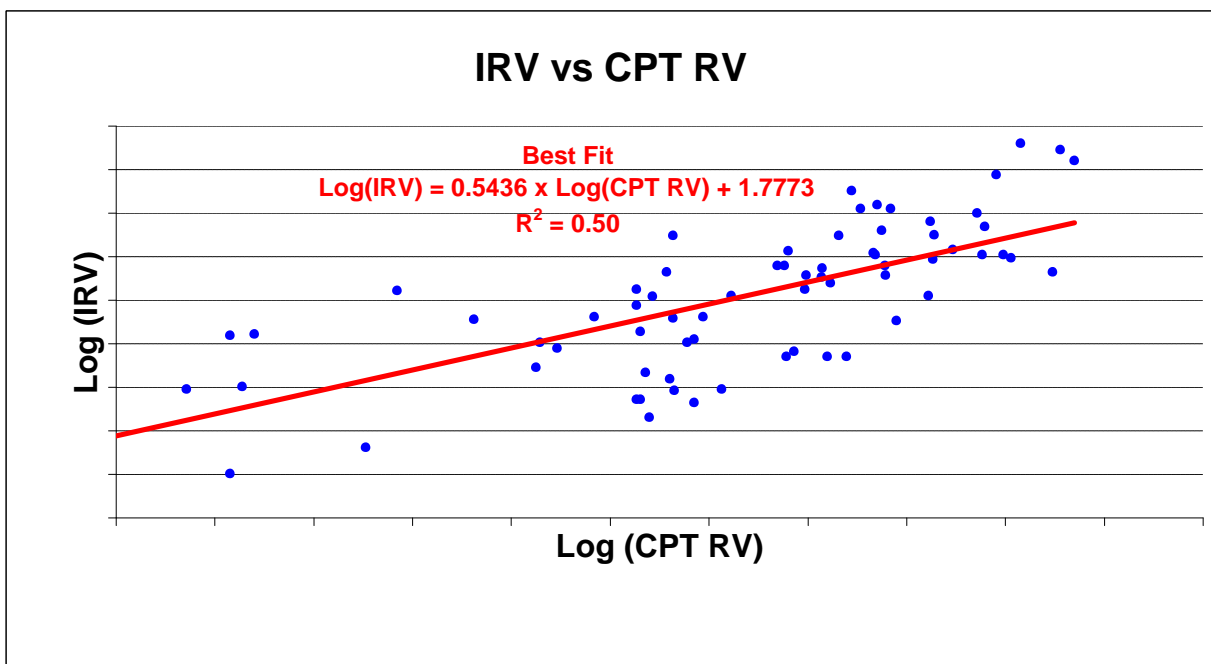
A plot of General Practice & Emergency Medicine's IRVs against CPT RV is set out in Figure 5.3. The fit is poor ( $R^2 = 0.59$ ) and there are twelve outliers which should be investigated: 30406, 30612, 30634, 37393, 37622, 41792, 44324, 47054, 47423, 47444, 47466 and 47678.

Figure 5.3



A log/log plot is also provided (Figure 5.4). The fit is still poor explaining 50% of the variation as against 59% previously. There are again a number of outliers which should be investigated. These are MBS item numbers 11700, 13300, 14200, 18254, 18260, 30216, 30615, 32147 and 46513, in addition to 30406, 44324, 47423, 47444 and 47466, which were mentioned previously.

Figure 5.4



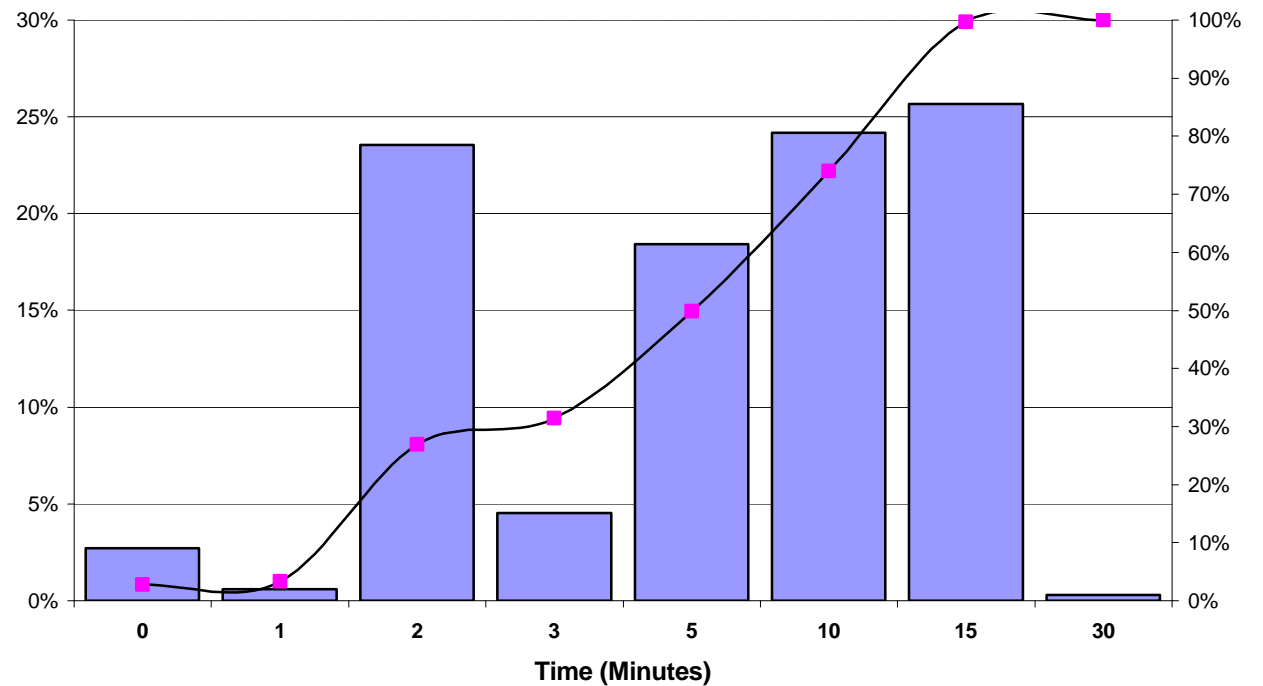
## Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Pre Service Time

Time	Freq	Percentage	Cum. Percentage
0	9	2.7%	2.7%
1	2	0.6%	3.3%
2	78	23.6%	26.9%
3	15	4.5%	31.4%
5	61	18.4%	49.8%
10	80	24.2%	74.0%
15	85	25.7%	99.7%
30	1	0.3%	100.0%
Total	331	100.0%	

Number of missing values = 0



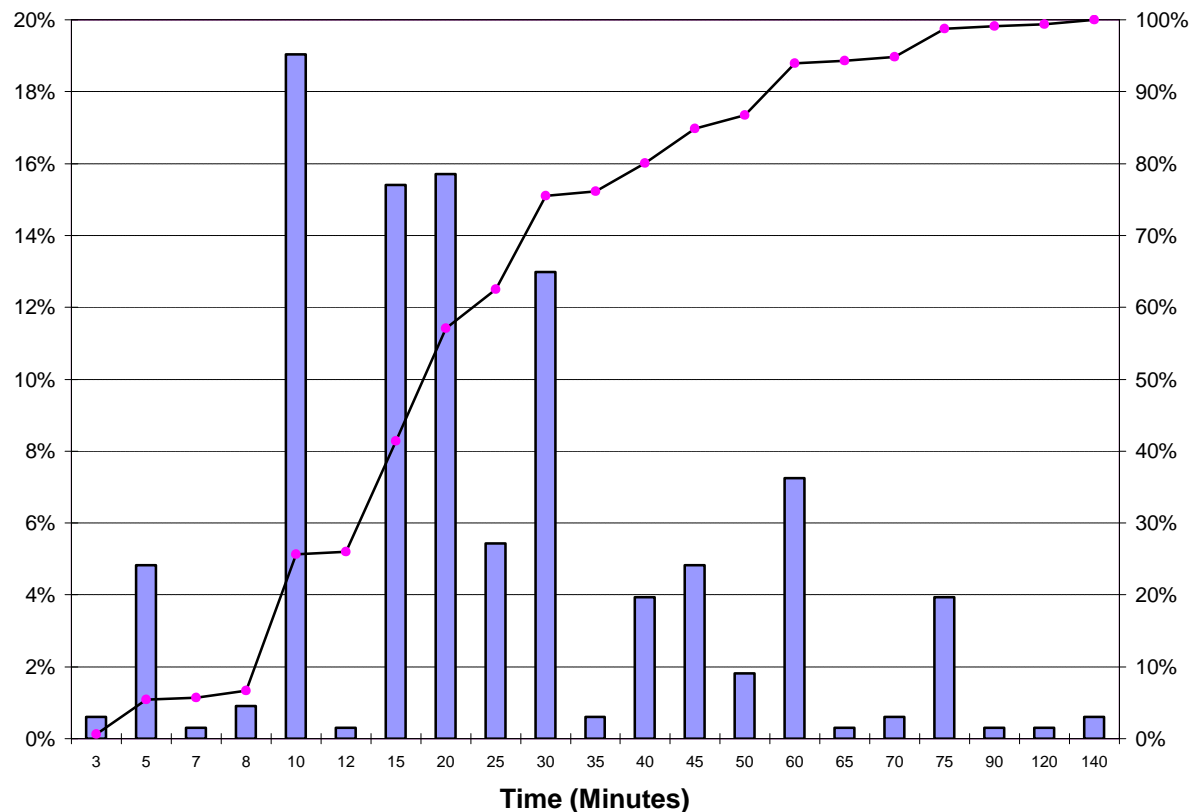


# Attachment 1 - Continued

## Summary Report for Intraservice Time

Time	Freq	Percentage	Cum. Percentage
3	2	0.6%	0.6%
5	16	4.8%	5.4%
7	1	0.3%	5.7%
8	3	0.9%	6.6%
10	63	19.0%	25.7%
12	1	0.3%	26.0%
15	51	15.4%	41.4%
20	52	15.7%	57.1%
25	18	5.4%	62.5%
30	43	13.0%	75.5%
35	2	0.6%	76.1%
40	13	3.9%	80.1%
45	16	4.8%	84.9%
50	6	1.8%	86.7%
60	24	7.3%	94.0%
65	1	0.3%	94.3%
70	2	0.6%	94.9%
75	13	3.9%	98.8%
90	1	0.3%	99.1%
120	1	0.3%	99.4%
140	2	0.6%	100.0%
<b>Total</b>	<b>331</b>	<b>100.0%</b>	

Number of missing values = 0

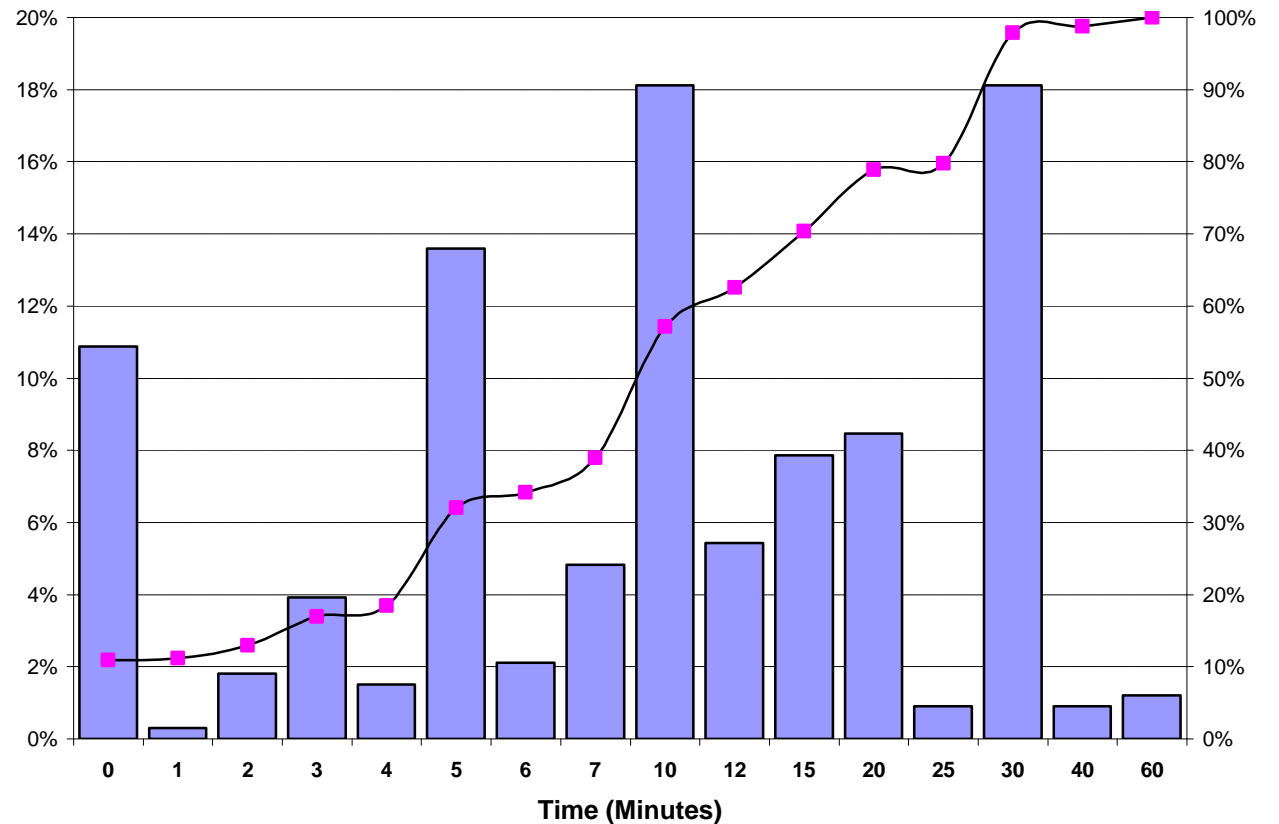


# Attachment 1 - Continued

## Summary Report for Post Service Time

Time	Freq	Percentage	Cum. Percentage
0	36	10.9%	10.9%
1	1	0.3%	11.2%
2	6	1.8%	13.0%
3	13	3.9%	16.9%
4	5	1.5%	18.4%
5	45	13.6%	32.0%
6	7	2.1%	34.1%
7	16	4.8%	39.0%
10	60	18.1%	57.1%
12	18	5.4%	62.5%
15	26	7.9%	70.4%
20	28	8.5%	78.9%
25	3	0.9%	79.8%
30	60	18.1%	97.9%
40	3	0.9%	98.8%
60	4	1.2%	100.0%
<b>Total</b>	<b>331</b>	<b>100.0%</b>	

Number of missing values = 0



**COMPARISON OF GENERAL PRACTICE AND EMERGENCY MEDICINE - NON-PROXY (GP-N)**

**INTRATIME ESTIMATES WITH OTHER ESTIMATES**

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x GP-N/OTE
	ID	Type	Definition of Time *		GP-N	OTE	
OST	H4	Priv	Knife to Skin -to- Dressing Applied	39	32.6	27.6	118.1
	H6	Priv	Knife to Skin -to- Drapes Removed	32	34.5	29.9	115.3
	H11	Priv	Pt Prepped -to- Drapes Removed	42	31.6	48.7	64.8
OPERATION TIME ** (OPT)	H1	Priv	Pt Positioned -to- Drapes Removed	42	34.2	23.7	144.1
	H8	Priv	Pt Positioned -to- Drapes Removed	65	26.1	20.1	129.7
	H10	Priv	Pt Positioned -to- Drapes Removed	20	31.3	23.6	132.5
	H13	Priv	Pt Positioned -to- Drapes Removed	35	33.1	21.8	152.0
	H15	Priv	Pt Positioned -to- Drapes Removed	32	26.7	23.7	112.9
	H16	Pub	Pt Positioned -to- Dressing Applied	95	24.6	33.8	72.7
	H17	Pub	Surgeon with Pt -to- Drapes Removed	77	24.6	31.8	77.5
	H18	Priv	Pt Positioned -to- Drapes Removed	79	27.0	21.0	128.8
	H19	Pub	Pt Positioned -to- Dressing Applied	67	28.8	28.3	101.7
	H20	Pub	Pt Positioned -to- Dressing Applied	79	22.7	21.3	106.5
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	65	21.0	35.6	59.0
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	66	26.1	30.8	84.6
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removed	29	30.3	27.6	110.1
OPERATION TIME 2 (OPT 2)	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	67	25.6	22.6	113.3
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	43	24.7	34.1	72.5
	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	26	25.4	24.5	103.6
	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	35	33.1	25.4	130.5
	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	35	26.6	27.3	97.5
	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	96	24.4	38.3	63.8
	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	80	24.7	37.8	65.4
	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	82	26.2	24.1	108.7
	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	90	27.7	31.3	88.3
	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	81	21.9	27.1	80.8
CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staff	66	26.4	34.5	76.3	
ANAESTHETIC TIME (OAT)	H1	Priv	Prep. Anaes. -to- Drapes Removed	46	32.9	32.4	101.6
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	40	31.6	50.3	62.9
	H6	Priv	Prep. Anaes. -to- Drapes Removed	32	34.5	38.1	90.6
	H8	Priv	Prep. Anaes. -to- Drapes Removed	65	25.7	27.2	94.7
	H10	Priv	Prep. Anaes. -to- Drapes Removed	20	31.3	33.1	94.4
	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	34	33.5	32.2	104.0
	H15	Priv	Induction of Anaes -to- Drapes Removed	36	26.7	30.4	87.6
	H16	Pub	Prep. Anaes. -to- Dressing Applied	102	24.3	45.9	52.9
	H17	Pub	Prep. Anaes. -to- Drapes Removed	82	24.7	50.3	49.1
	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	82	26.9	29.6	90.8
	H19	Pub	Prep. Anaes. -to- Dressing Applied	68	29.0	41.1	70.6
	H20	Pub	Prep. Anaes. -to- Dressing Applied	84	22.4	38.3	58.5
	CANS	Pub & Priv	Prep. Anaes. -to- Surg.Leaves Pt	67	26.3	35.4	74.3
Deloitte	Pub & Priv	Induction of Anaes. -to- Drapes Removed	28	30.9	34.5	89.6	
ANAESTHETIC TIME 2 (OAT 2)	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	177	23.4	41.2	56.7
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	39	28.0	44.6	62.6
	H7	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	33	25.8	26.2	98.3
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	66	26.1	31.5	82.9
	H9A	Priv	Prep. Anaes. -to- Trans. to Recovery Staff	42	25.1	43.3	57.9
	H9B	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	31	24.4	35.6	68.5
	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	44	30.6	60.0	51.0
	H12	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	14	30.0	44.7	67.2
	H14	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	106	25.0	48.9	51.2
	H15	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	37	26.2	36.5	71.8
	H16	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	100	24.4	49.8	49.0
	H17	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	83	24.7	58.3	42.4
	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	92	27.5	44.3	62.2
	H20	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	84	22.4	44.3	50.6
	CANS	Pub & Priv	Prep. Anaes. -to- Trans. to Recovery Staff	68	26.8	41.7	64.3
WAGroup	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	137	21.8	27.5	79.2	
TIME IN THEATRE (THT)	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	43	29.8	36.7	81.1
	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	14	35.4	37.3	94.9
	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	44	30.9	76.9	40.2
	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	34	33.5	35.9	93.5
	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	37	26.5	54.3	48.8
	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	86	26.2	33.1	79.2
	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	95	27.6	59.4	46.4
	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	85	24.5	30.1	81.4
	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	138	22.6	27.0	83.5
C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staff	32	26.3	26.6	98.8	

\* Definition of Time  
- see Attachment A

**\*\* Median ratio of GP-N intra time estimates to OPT**  
Unweighted = 110.1 %  
Weighted (for number of items in common) = 106.5 %

## COMPARISON OF GENERAL PRACTICE AND EMERGENCY MEDICINE - PROXY ITEMS (GP-P)

## INTRA TIME ESTIMATES WITH OTHER ESTIMATES

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x GP-P/OTE
	ID	Type	Definition of Time *		GP-P	OTE	
OST	H4	Priv	Knife to Skin -to- Dressing Applied	16	42.3	43.9	96.4
	H6	Priv	Knife to Skin -to- Drapes Removed	14	44.8	48.0	93.4
	H11	Priv	Pt Prepped -to- Drapes Removed	16	40.4	76.1	53.1
OPERATION TIME (OPT)	H1	Priv	Pt Positioned -to- Drapes Removed	15	34.8	32.6	106.8
	H8	Priv	Pt Positioned -to- Drapes Removed	16	42.3	40.8	103.7
	H10	Priv	Pt Positioned -to- Drapes Removed	10	41.2	37.3	110.5
	H13	Priv	Pt Positioned -to- Drapes Removed	14	35.5	29.4	121.0
	H15	Priv	Pt Positioned -to- Drapes Removed	14	43.0	37.6	114.5
	H16	Pub	Pt Positioned -to- Dressing Applied	13	46.7	52.6	88.8
	H17	Pub	Surgeon with Pt -to- Drapes Removed	12	45.6	51.3	88.9
	H18	Priv	Pt Positioned -to- Drapes Removed	19	37.5	38.0	98.6
	H19	Pub	Pt Positioned -to- Dressing Applied	15	41.8	39.7	105.3
	H20	Pub	Pt Positioned -to- Dressing Applied	18	38.7	38.9	99.5
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	11	38.8	48.8	79.6
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	18	38.7	47.0	82.4
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removed	15	42.1	41.5	101.6
OPERATION TIME 2 (OPT 2)	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	16	42.3	45.0	94.1
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	11	51.6	64.7	79.6
	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	12	26.4	31.8	83.0
	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	14	35.5	32.6	108.8
	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	14	43.0	40.9	105.2
	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	13	46.7	58.7	79.6
	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	12	45.6	57.5	79.2
	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	19	37.5	42.6	88.0
	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	18	39.0	44.0	88.6
	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	18	38.7	48.8	79.4
CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staff	18	38.7	52.0	74.4	
ANAESTHETIC TIME (OAT)	H1	Priv	Prep. Anaes. -to- Drapes Removed	15	35.8	47.9	74.8
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	16	42.3	70.9	59.7
	H6	Priv	Prep. Anaes. -to- Drapes Removed	15	42.5	54.9	77.3
	H8	Priv	Prep. Anaes. -to- Drapes Removed	16	42.3	50.8	83.3
	H10	Priv	Prep. Anaes. -to- Drapes Removed	10	41.2	49.8	82.7
	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	14	35.5	40.4	87.9
	H15	Priv	Induction of Anaes -to- Drapes Removed	14	43.0	48.7	88.3
	H16	Pub	Prep. Anaes. -to- Dressing Applied	14	43.7	64.4	67.8
	H17	Pub	Prep. Anaes. -to- Drapes Removed	11	47.9	74.6	64.2
	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	19	37.5	49.9	75.1
	H19	Pub	Prep. Anaes. -to- Dressing Applied	16	40.1	55.3	72.5
	H20	Pub	Prep. Anaes. -to- Dressing Applied	18	38.7	56.3	68.8
	CANS	Pub & Priv	Prep. Anaes. -to- Surg.Leaves Pt	18	38.7	54.2	71.5
Deloitte	Pub & Priv	Induction of Anaes. -to- Drapes Removed	15	42.5	51.5	82.5	
ANAESTHETIC TIME 2 ** (OAT 2)	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	20	35.9	69.0	52.0
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	14	45.1	67.5	66.9
	H7	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	11	20.6	28.4	72.6
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	16	42.3	55.0	77.0
	H9A	Priv	Prep. Anaes. -to- Trans. to Recovery Staff	12	48.5	70.6	68.7
	H9B	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	13	24.8	40.6	61.0
	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	17	38.9	88.9	43.8
	H12	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	10	41.2	59.4	69.3
	H14	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	17	37.2	59.5	62.5
	H15	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	14	43.0	52.0	82.7
	H16	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	13	46.7	71.3	65.5
	H17	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	11	47.9	80.8	59.3
	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	18	39.0	60.5	64.5
	H20	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	18	38.7	66.3	58.4
	CANS	Pub & Priv	Prep. Anaes. -to- Trans. to Recovery Staff	18	38.7	59.2	65.4
	WAGroup	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	18	39.0	58.3	66.9
TIME IN THEATRE (THT)	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	19	37.5	54.9	68.3
	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	8	28.4	30.4	93.3
	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	17	38.9	106.2	36.7
	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	14	35.5	43.7	81.2
	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	14	43.0	64.2	67.0
	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	19	37.5	54.5	68.8
	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	17	40.7	78.5	51.9
	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	16	25.8	30.6	84.3
	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	19	30.4	35.3	86.0
C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staff	14	23.4	27.4	85.2	

\* Definition of Time  
- see Attachment A

\*\* Median ratio of GP-P intra time estimates to OAT2  
Unweighted = 65.5 %  
Weighted (for number of items in common) = 65.4 %

**THEATRE TIMES DEFINITIONS - STANDARDISED FROM HOSPITALS AND OTHER SOURCES**

PATHWAYS FOR SURGEON AND ANAESTHETIST			PT ENTERS OP SUITE	PT ENTERS ANAESTHETIC BAY OR OPERATING ROOM			START OF TIME						END OF TIME		XFER TO RECOV	XFER FROM RECOV
				Anaesth. arrives to talk to Pt	Anaesth. prepares Pt for anaes-cannula/lines insertion	Anaes. Commence admin/induction of anaes	Surg. with Pt after anaes induction	Pt is positioned	Pt is draped	Pt is prep'ed	Knife to skin	Wound Closure	Dressing Applied	Drapes Removed	Surgical Team leave Pt	
ID	TIME	TYPE														
Hosp4	H4OST	Priv														
Hosp6	H6OST	Priv														
Hosp11	H11OST	Priv														
Hosp1	H1OPT	Priv														
Hosp8	H8OPT	Priv														
Hosp10	H10OPT	Priv														
Hosp13	H13OPT	Priv														
Hosp15	H15OPT	Priv														
Hosp16	H16OPT	Pub														
Hosp17	H17OPT	Pub														
Hosp18	H18OPT	Priv														
Hosp19	H19OPT	Pub														
Hosp20	H20OPT	Pub														
APHA	APHAOPT	Priv														
CANS	CANSOPT	Pub & Priv														
Deloitte	DTOPT	Pub & Priv														
Hosp8	H8OPT2	Priv														
Hosp9A	H9AOPT2	Priv														
Hosp9B	H9BOPT2	Priv/Day														
Hosp13	H13OPT2	Priv														
Hosp15	H15OPT2	Priv														
Hosp16	H16OPT2	Pub														
Hosp17	H17OPT2	Pub														
Hosp18	H18OPT2	Priv														
Hosp19	H19OPT2	Pub														
Hosp20	H20OPT2	Pub														
CANS	CANSOPT2	Pub & Priv														
Hosp1	H1OAT	Priv														
Hosp4	H4OAT	Priv														
Hosp6	H6OAT	Priv														
Hosp8	H8OAT	Priv														
Hosp10	H10OAT	Priv														
Hosp13	H13OAT	Priv														
Hosp15	H15OAT	Pub														
Hosp16	H16OAT	Pub														
Hosp17	H17OAT	Priv														
Hosp18	H18OAT	Pub														
Hosp19	H19OAT	Pub														
Hosp20	H20OAT	Pub & Priv														
CAnS	CANSOAT	Pub & Priv														
Deloitte	DTOAT	Pub & Priv														
MBS	MBSOAT2	Pub & Priv														
Hosp5	H5OAT2	Priv														
Hosp7	H7OAT2	Priv/Day														
Hosp8	H8OAT2	Priv														
Hosp9A	H9AOAT2	Priv														
Hosp9B	H9BOAT2	Priv/Day														
Hosp11	H11OAT2	Priv														
Hosp12	H12OAT2	Pub														
Hosp14	H14OAT2	Pub														
Hosp15	H15OAT2	Priv														
Hosp16	H16OAT2	Pub														
Hosp17	H17OAT2	Pub														
Hosp19	H19OAT2	Pub														
Hosp20	H20OAT2	Pub														
CANS	CANSOAT2	Pub & Priv														
WAGroup	WAOAT2	Priv														
Hosp2	H2THT	Priv														
Hosp3	H3THT	Pub														
Hosp11	H11THT	Pub														
Hosp13	H13THT	Priv														
Hosp15	H15THT	Priv														
Hosp18	H18THT	Priv														
Hosp19	H19THT	Day & Other														
Cmix -Pub	CMXPHTHT	Priv														
Cmix -Pte	CMXPVHTHT	Priv														
Cmix -on	CMXOPHTHT	Priv														

KEY: | Hospitals where start/end times are defined by > 1 pathway time option

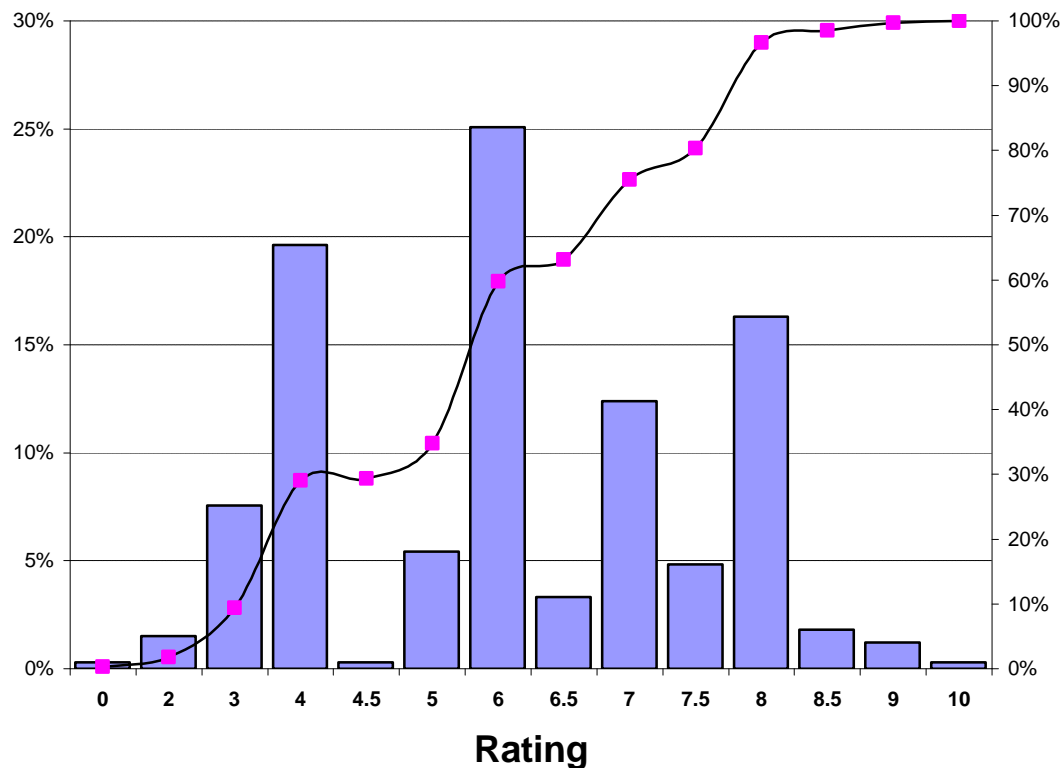
## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Frequency	%age	Cume %age
0	1	0.3%	0.3%
2	5	1.5%	1.8%
3	25	7.6%	9.4%
4	65	19.6%	29.0%
4.5	1	0.3%	29.3%
5	18	5.4%	34.7%
6	83	25.1%	59.8%
6.5	11	3.3%	63.1%
7	41	12.4%	75.5%
7.5	16	4.8%	80.4%
8	54	16.3%	96.7%
8.5	6	1.8%	98.5%
9	4	1.2%	99.7%
10	1	0.3%	100.0%
<b>Total</b>	<b>331</b>	<b>100.0%</b>	

Number of missing values = 0

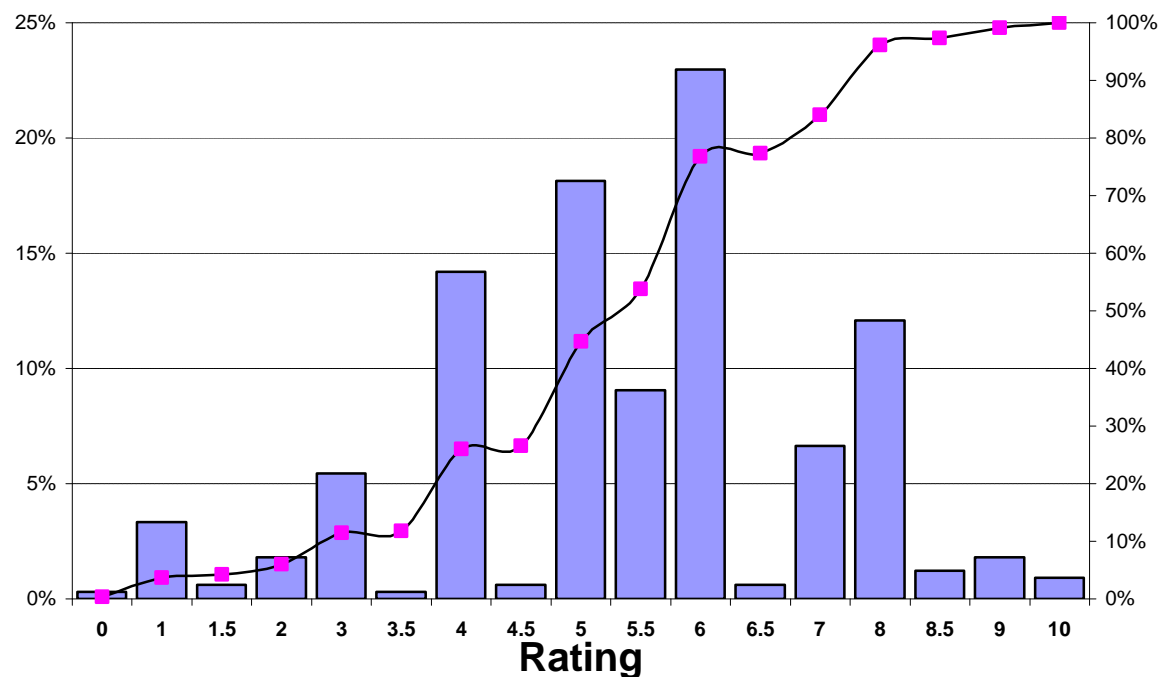


## Attachment 3 - Continued

### Summary Report for Technical skill etc.

Rating	Frequency	%age	Cume %age
0	1	0.3%	0.3%
1	11	3.3%	3.6%
1.5	2	0.6%	4.2%
2	6	1.8%	6.0%
3	18	5.4%	11.5%
3.5	1	0.3%	11.8%
4	47	14.2%	26.0%
4.5	2	0.6%	26.6%
5	60	18.1%	44.7%
5.5	30	9.1%	53.8%
6	76	23.0%	76.7%
6.5	2	0.6%	77.3%
7	22	6.6%	84.0%
8	40	12.1%	96.1%
8.5	4	1.2%	97.3%
9	6	1.8%	99.1%
10	3	0.9%	100.0%
<b>Total</b>	<b>331</b>	<b>100.0%</b>	

Number of missing values = 0

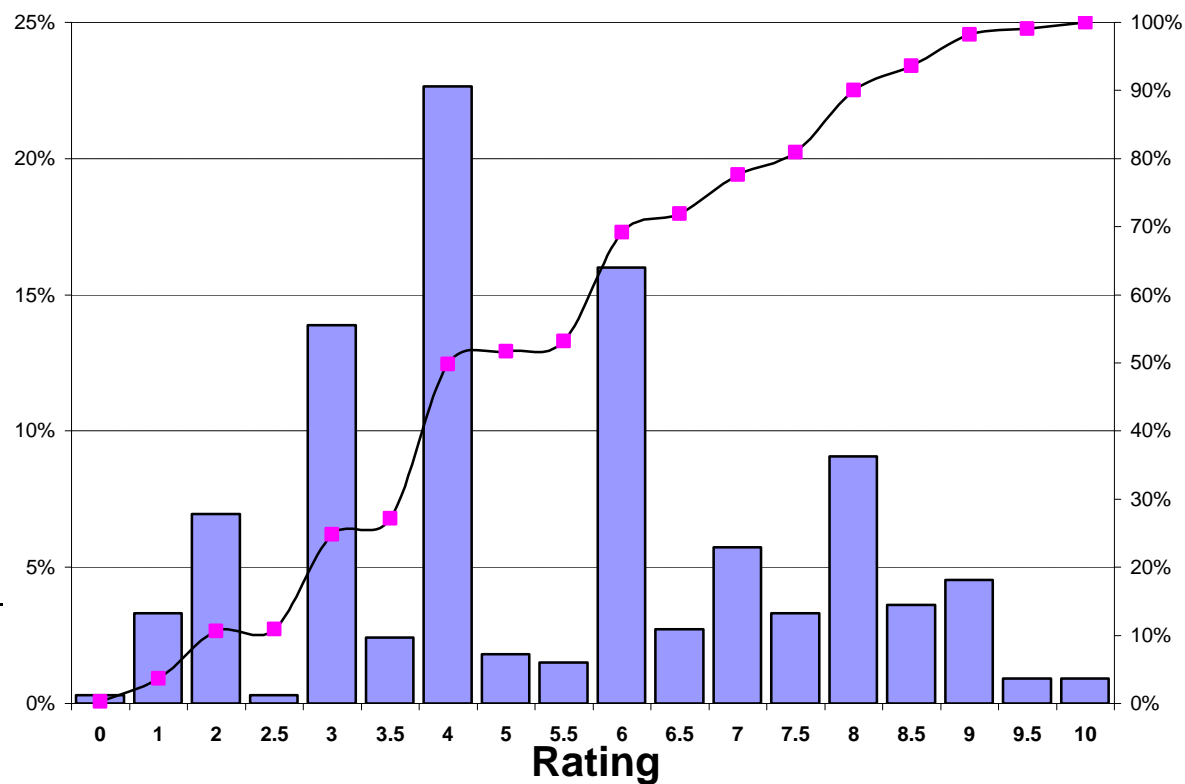


## Attachment 3 - Continued

### Summary Report for Stress

Rating	Frequency	%age	Cume %age
0	1	0.3%	0.3%
1	11	3.3%	3.6%
2	23	6.9%	10.6%
2.5	1	0.3%	10.9%
3	46	13.9%	24.8%
3.5	8	2.4%	27.2%
4	75	22.7%	49.8%
5	6	1.8%	51.7%
5.5	5	1.5%	53.2%
6	53	16.0%	69.2%
6.5	9	2.7%	71.9%
7	19	5.7%	77.6%
7.5	11	3.3%	81.0%
8	30	9.1%	90.0%
8.5	12	3.6%	93.7%
9	15	4.5%	98.2%
9.5	3	0.9%	99.1%
10	3	0.9%	100.0%
<b>Total</b>	<b>331</b>	<b>100.0%</b>	

Number of missing values = 0





## Attachment 4 - Links with Other Specialties

The number of link items between General Practice & Emergency Medicine and the other Consensus Groups is set out below.

Specialty	Proxy Items	Procedure Items	Consultation Items	Total Items
Oral and Maxillo-Facial Surgery	0	10	8	18
Obstetrics / Gynaecology	0	10	2	12
General Surgery	0	14	13	27
Cardio Thoracic Surgery	0	2	2	4
Neurosurgery	0	1	12	13
Orthopaedic Surgery	0	31	13	44
Paediatric Surgery	0	1	7	8
Plastic Surgery	0	18	0	18
Urology	0	4	13	17
Vascular Surgery	0	1	3	4
Ophthalmology	0	2	10	12
Anaesthesiology	20	10	13	43
Otolaryngology (Head & Neck Surgery)	0	12	1	13
Dermatology	0	22	9	31
Paediatric / Thoracic Medicine	0	13	13	26
General Medicine	0	20	9	29
Cardiology, Renal, ICU	0	15	13	28
Radiation Oncology	0	0	13	13
Gastroenterology	0	2	12	14
Neurology	0	1	13	14
Haematology, Medical Oncology	0	3	11	14
Psychiatry	0	0	11	11
<b>Total</b>	<b>20</b>	<b>136</b>	<b>13</b>	<b>169</b>

## Glossary

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Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: a) being a good map b) having as high a frequency as possible c) being well spread in terms of their rank.
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.

**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**Oral and Maxillo-Facial Surgery  
Summary Status Report**

**September 14, 1999**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**

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## Section 1 Overview

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This document outlines the results of an examination of the information sent to the NCCH by the Oral and Maxillo-Facial Surgery Consensus Group.

The Oral and Maxillo-Facial Surgery Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 172 items. These comprised 156 procedure items and 16 consultation items.

Analysis of this information showed:

- The median ratio of Oral and Maxillo-Facial Surgery's intra time estimates to NCCH's Theatre Times Database observed procedure times was 111.7%. This implies a slight tendency to over estimate intra times,
- None of Oral and Maxillo-Facial Surgery's procedure items were link items but all of their consultation items were.
- The group gave significantly greater ranks to their procedure items (= non-links) than to their consultation items (= links) ( $p < 0.001$ ),
- There was no bias in the ranking of potential core items,
- The maximum range in relative rates of pay implied by the Group's rankings was 1 to 2.36<sup>1</sup>. This is less than the median observed for specialties so far examined. However it is consistent with the better sets of rankings and ratings. In terms of deviations in rates of pay, there shouldn't therefore be any major difficulty in aligning Oral and Maxillo-Facial Surgery's rankings and ratings with those of the other groups at a similar stage of development.

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

3  
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9

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for Oral and Maxillo-Facial Surgery are set out in Table 2.1 together with associated standard deviations and ranges.

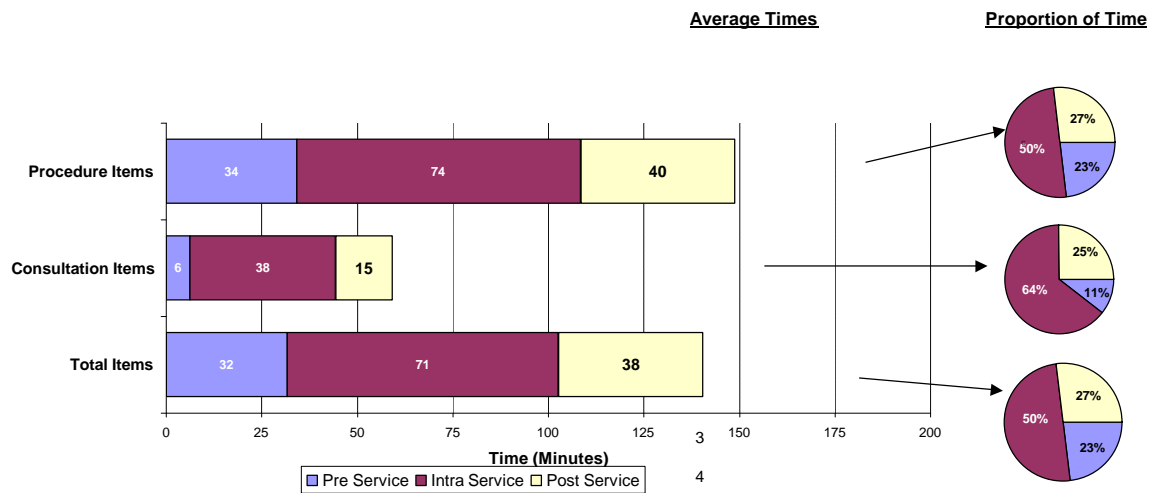
The mean intra service time was 71 minutes and the mean total time was 141 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
Mean	32	71	38	141
SD	36	64	30	124
Min	0	10	0	15
Max	180	420	120	720

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for procedure items, consultation items and all items.

**Figure 2.1**



A summary breakdown is also provided in Table 2.2.

**Table 2.2**

	Average Times	Pre Service	Intra Service	Post Service	Total Time
Procedure Items	16	34.2	75.0	40.3	149.5
Consultation Items		6.3	38.1	15.0	59.4
Total Items	17	31.6	71.0	37.9	140.5

Oral and Maxillo-Facial Surgery's intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies.

The median ratio of Oral and Maxillo-Facial Surgery's intra time estimates to the observed procedure times was 111.7%. This implies a slight tendency by this CG to over estimate their intra times. A more detailed analysis is provided in Attachment 2.

### Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for Oral and Maxillo-Facial Surgery are set out in Table 3.1 together with associated standard deviations and ranges.

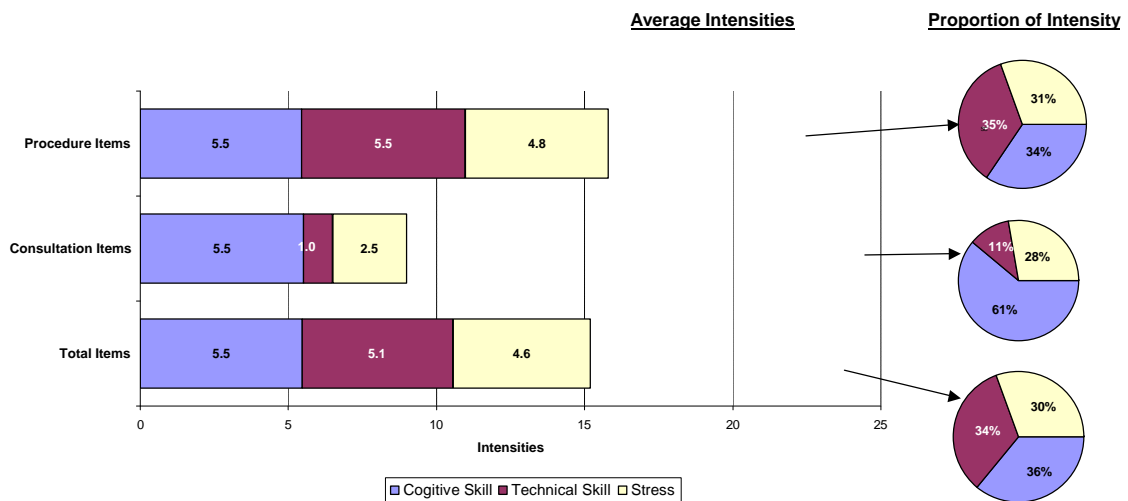
The mean ratings were 5.5 for cognitive skill, 5.1 for technical skill and 4.6 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
<b>Mean</b>	5.5	5.1	4.6	15.2
<b>SD</b>	1.8	1.8	2.2	6.0
<b>Min</b>	2.0	1.0	1.0	5.0
<b>Max</b>	10.0	9.5	9.0	28.5

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. They are provided for procedure items, consultation items and all items.

**Figure 3.1**



A summary breakdown is also provided in Table 3.2.

**Table 3.2**

Average Intensity Ratings	Cognitive Skill	Technical Skill	Stress	Total Intensity
Procedure Items	5.5	5.5	4.8	15.8
Consultation Items	5.5	1.0	2.5	9.0
Total Items	5.5	5.1	4.6	15.2

## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (that is time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4.1. The procedure items were given significantly higher ranks than the consultation items (Sum of ranks test,  $p < 0.001$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Procedure(Non-link)	156	1	172	81.86
Consultation(Link)	16	92	171	131.72
<b>Total</b>	172	1	172	86.50

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**.

All of the Oral and Maxillo-Facial Surgery Group's consultation items are links but none of their procedure items are. For this reason Table 4.1 can also be interpreted as a comparison of link items versus non-link items. It follows therefore that the link items were given significantly lower ranks than the non-link items. (Sum of ranks test,  $p < 0.001$ ). More details of the Group's link items are provided in Attachment 4.

Good Maps of Oral and Maxillo-Facial Surgery's items to CPT were available for 17 of their 172 items. A breakdown of the ranks given to these good map items and to the poor/no map items is set out in Table 4.2. The ranks given to the good map items were not significantly different from those given to the poor/no map items. This means that good map items (i.e. potential core items) are well spread throughout the ranks.

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Good Map	17	17.5	172	96.0
Poor/No Map	155	1	171	85.5
<b>Total</b>	172	1	94	86.5

3

4

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17

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21



## Section 5 Relative Value Implications

For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analysed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for Oral and Maxillo-Facial Surgery is 1 to 64.

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (ie. disregarding any deviation in the composition of times, (pre: intra: post) the range in relative rates of pay is 1 to 1.94. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the range in relative rates of pay is 1 to 2.36.

These ranges in relative rates of pay are lower than the median observed for specialties examined so far<sup>3</sup>. Nevertheless, they are consistent with the better sets of practice guidelines. In terms of deviation factors of pay, these are about 1/3.

Comparisons between consultation and procedure items, between link items and non link items and between good map items and non map items in terms of imputed relative value (IVR) are set out in Table 5.1 (overleaf).

3  
4  
6  
8  
9  
13

<sup>3</sup> The median range in relative rates of pay depending on intensity alone is 1 to 3.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.5.

The consultation items (= link items) were given significantly lower imputed relative values than the procedure items (=non-link items) (t tests, p< 0.05 using untransformed data, p< 0.001 using log transformed data). There was no significant difference between the imputed relative values given to good map items and those given to poor/ no-map items.

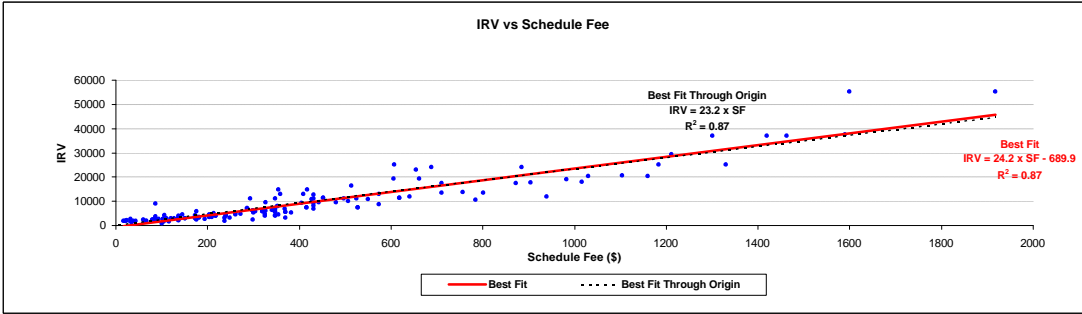
21

Table 5.1

Type of Item	Number Reviewed	IRVs		
		Mean ± SD	Low	High
Consultation	16	2821 ± 1013	1350	4340
Procedure	156	8932 ± 9346	870	55290
Link	16	2821 ± 1013	1350	4340
Non-link	156	8932 ± 9346	870	55290
Good Map	17	5551 ± 4278	870	19350
Poor/No Map	155	8673 ± 9417	1350	55290
<b>Total</b>	<b>172</b>	<b>8364 ± 9080</b>	<b>870</b>	<b>55290</b>

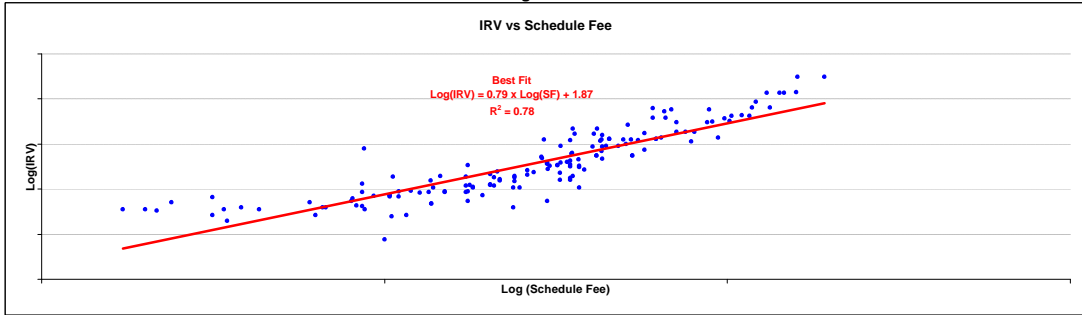
A plot of Oral and Maxillo-Facial Surgery's imputed relative values against existing schedule fee is set out in Figure 5.1. Two lines of best fit are also shown. Both explain 87% of the variation in imputed relative values.

Figure 5.1

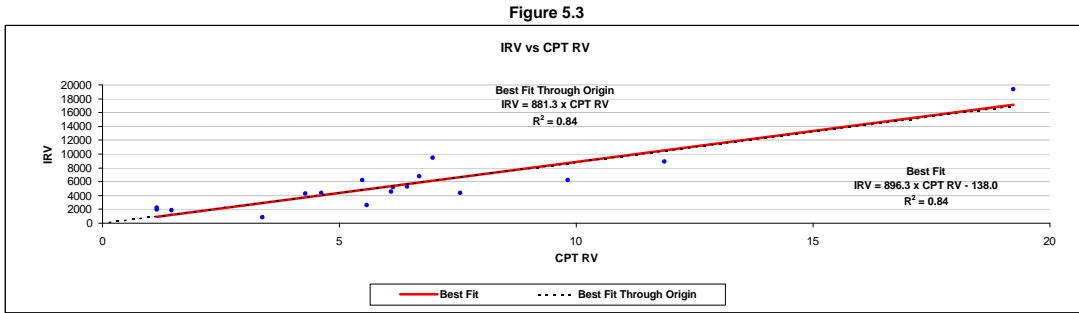


We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. However the fit is not as good, explaining 78% of the variation as against 87% previously. The line of best fit appears to be a curve rather than a straight line.

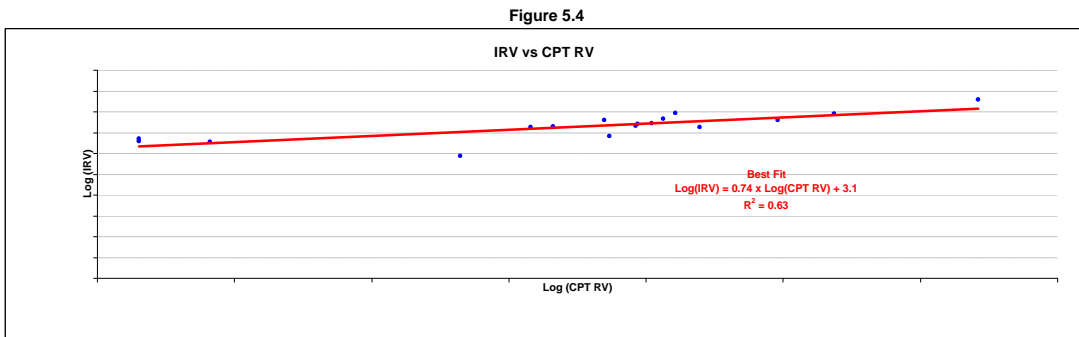
Figure 5.2



A plot of Oral and Maxillo-Facial Surgery's IRVs against CPT RV is set out in Figure 5.3. As was the case with Schedule Fee, the lines of best fit explain most of the variation.



As for Schedule Fee, we might expect the magnitude of error deviation to increase with CPT RV. Accordingly, a log/log plot is also provided (Figure 5.4). Once again, the fit is not as good as was achieved with the untransformed data. With untransformed data, the lines of best fit explained 84% of the variation. With log transformed data, only 63% of the variation was explained.



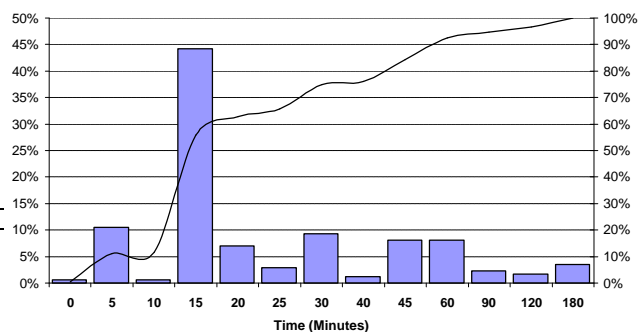
## Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Pre-Service Time

	Time	Freq.	Percentage	Cum. Percentage
	0	1	0.6%	0.6%
	5	18	10.5%	11.0%
	10	1	0.6%	11.6%
	15	76	44.2%	55.8%
	20	12	7.0%	62.8%
	25	5	2.9%	65.7%
	30	16	9.3%	75.0%
	40	2	1.2%	76.2%
	45	14	8.1%	84.3%
	60	14	8.1%	92.4%
	90	4	2.3%	94.8%
	120	3	1.7%	96.5%
	180	6	3.5%	100.0%
<b>Total</b>		<b>172</b>	<b>100%</b>	

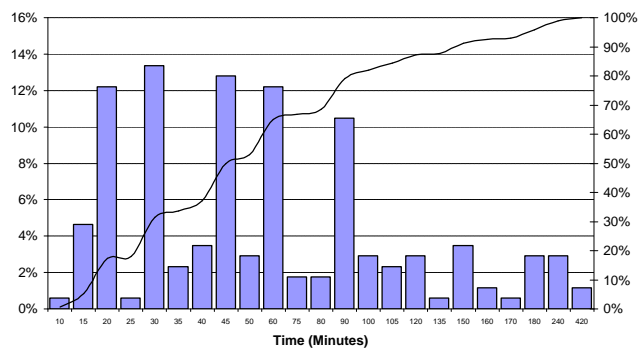
Number of missing values = 0



## Attachment 1 - Continued

### Summary Report for Intra-Service Time

Time	Freq.	Percentage	Cum. Percentage
10	1	0.6%	0.6%
15	8	4.7%	5.2%
20	21	12.2%	17.4%
25	1	0.6%	18.0%
30	23	13.4%	31.4%
35	4	2.3%	33.7%
40	3	3.5%	37.2%
45	22	12.8%	50.0%
50	4	2.9%	52.9%
60	21	12.2%	65.1%
75	6	1.7%	66.9%
80	3	1.7%	68.6%
90	8	10.5%	79.1%
100	5	2.9%	82.0%
105	9	2.3%	84.3%
120	5	2.9%	87.2%
135	13	0.6%	87.8%
150	6	3.5%	91.3%
160	16	1.2%	92.4%
170	1	0.6%	93.0%
180	17	2.9%	95.9%
240	5	2.9%	98.8%
420	20	1.2%	100.0%
<b>Total</b>	<b>172</b>	<b>100.0%</b>	
Number of missing values =	0		
	21		

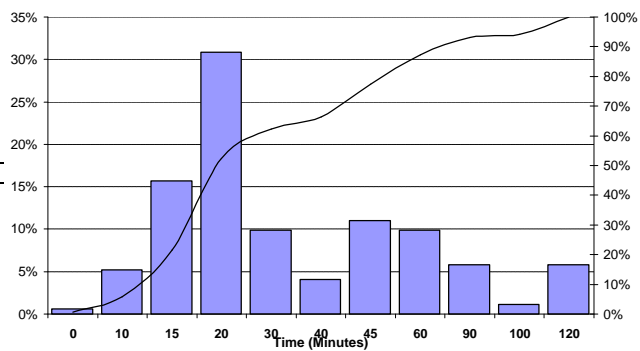


## Attachment 1 - Continued

### Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	1	0.6%	0.6%
10	9	5.2%	5.8%
15	27	15.7%	21.5%
20	53	30.8%	52.3%
30	17	9.9%	62.2%
40	7	4.1%	66.3%
45	19	11.0%	77.3%
60	17	9.9%	87.2%
90	10	5.8%	93.0%
100	2	1.2%	94.2%
120	10	5.8%	100.0%
<b>Total</b>	<b>172</b>	<b>100.0%</b>	

Number of missing values = 0



**Attachment 2: COMPARISON OF ORAL AND MAXILLO-FACIAL SURGERY (OMS)  
INTRA TIME ESTIMATES WITH OTHER ESTIMATES**

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x OMS/OTE	
	ID	Priv/Pub/Day Surg	Definition of Time		OMS	OTE		
OPERATION TIME (OPT) *	H1	Priv	Op Start to Op End	2	47.5	32.5	146.2	
	H4	Priv	Op Start to Op End	0				
	H6	Priv	Op Start to Op End	13	39.6	30.8	128.9	
	H8	Priv	Surgeon Start to Drapes Removed	8	50.0	28.8	173.4	
	H9A	Priv	Inpatient, Surgery Start to Surgery Finish	0				
	H9B	Day	Day Surgery, Surgery Start to Surgery Finish	3	55.0	30.7	179.3	
	H10	Priv	Op Start to Op End	4	30.0	21.3	141.2	
	H11	Priv	Knife to Skin - Application of Dressing	11	99.1	147.3	67.3	
	H13	Priv	Surgeon Start to Surgeon Finish	3	35.0	16.3	214.3	
	H15	Priv	Op Start to Op End	29	93.3	62.1	150.2	
	H16	Pub	Proc Start to Proc End	66	62.6	56.1	111.7	
	H17	Pub	Surgical Start to Surgical End	47	71.0	69.4	102.3	
	H18	Priv	Proc Start to Proc End	22	63.0	64.0	98.4	
	H19	Pub	Positioning to Dressings Applied	13	54.2	60.0	90.4	
	APHA	Priv	Procedure Time	22	68.2	81.9	83.2	
	Deloitte	Pub & Priv	Procedure Time	3	41.7	52.3	79.6	
	OPERATION TIME 2 (OPT 2)	H8	Priv	Surgeon Start to Xfer from OR	8	50.0	34.3	145.7
		H13	Priv	Surgeon Start to Xfer from OR	3	35.0	21.0	166.7
		H15	Priv	Op Start to Recovery Admission	29	91.2	66.3	137.5
H16		Pub	Proc Start to Recovery Admission	69	62.0	63.1	98.3	
H17		Pub	Surgical Start to Xfer from OR	46	71.2	79.4	89.7	
H18		Priv	Proc Start to Xfer from OR	24	59.6	67.7	88.1	
ANAESTHETIC TIME (OAT)	H19	Pub	Positioning to Ex Theatre	17	61.8	76.3	80.9	
	MBS	Pub & Priv	Anaesthetic Time	150	76.5	117.1	65.4	
	H1	Priv	Anaesthetic Start to Op End	2	47.5	40.0	118.8	
	H4	Priv	Anaesthetic Start to Op End	0				
	H5	Priv	Anaesthetic Start to Surgery End	1	35.0	43.0	81.4	
	H6	Priv	Anaesthetic Start to Op End	14	43.2	46.9	92.1	
	H8	Priv	Patient in Theatre to Drapes Removed	8	50.0	38.4	130.2	
	H9A	Priv	Inpatient in A. Bay to Surgery Finish	0				
	H9B	Day	Day Surgery, Anaesthetist Start to Surgery F	3	55.0	43.7	125.9	
	H10	Priv	Anaesthetic Start to Op End	5	36.0	43.0	83.7	
	H13	Priv	Anaesthetic Start to Surgeon End	3	35.0	27.7	126.5	
	H15	Priv	Anaesthetic Start to Op End	29	93.3	74.4	125.3	
	H16	Pub	Anaesthetic Start to Proc End	68	59.4	69.7	85.3	
	H17	Pub	Anaesthetic Start to Surgical End	46	71.2	90.1	79.0	
	H18	Priv	Anaesthetic Start to Proc End	25	58.4	71.6	81.5	
	H19	Pub	Anaesthetic Start to Dressings Applied	13	54.2	78.9	68.7	
	Deloitte	Pub & Priv	Anaesthetic Time	3	41.7	61.7	67.6	
	ANAESTHETIC TIME 2 (OAT 2)	H8	Priv	Patient in Theatre to Xfer from OR	8	50.0	43.9	114.0
		H11	Priv	Anaesthetic Start to Xfer to Recovery	15	100.3	179.3	56.0
H12		Pub	Anaesthetic Start to Xfer to Recovery	0				
H13		Priv	Anaesthetic Start to Xfer from OR	3	35.0	32.3	108.3	
3		Pub	Anaesthetic Start to Recovery Admission	13	52.3	62.5	83.7	
H15		Priv	Anaesthetic Start to Recovery Admission	30	92.2	77.3	119.3	
4		Pub	Anaesthetic Start to Recovery Admission	69	59.4	76.5	77.7	
H17		Pub	Anaesthetic Start to Xfer from OR	46	71.2	101.2	70.4	
6		Priv	Anaesthetic Start to Xfer from OR	25	58.4	80.1	72.9	
H19		Pub	Anaesthetic Start to Ex Theatre	19	60.8	94.5	64.3	
TIME IN THEATRE (THT)	8	Priv	Total Time in Theatre	29	90.3	94.6	95.5	
	H3	Priv	Total Time in Theatre	6	163.3	172.0	95.0	
	9	Day	Total Time in Theatre	17	57.7	75.5	76.3	
	H11	Priv	Dress, scrub etc. to Xfer to Recovery	15	100.3	199.5	50.3	
	13	Priv	Theatre Reception to Recovery Admission	28	93.4	98.1	95.2	
	H19	Pub	In Op Suite to Ex Theatre	20	63.8	116.7	54.6	
	16	Pub	Casemix Public Theatre Time	12	34.6	36.3	95.2	
	Cmix Pri	Priv	Casemix Private Theatre Time	69	49.5	44.5	111.3	
	17	Day & Othe	Casemix Other Theatre Time	6	36.7	32.1	114.1	
	WA	Priv	WA Group Total Time in Theatre	83	62.2	71.0	87.6	

20

21

* Median ratio of OMS intra time estimates to OPT Unweighted = 120.3 % Weighted (for number of items in common) =
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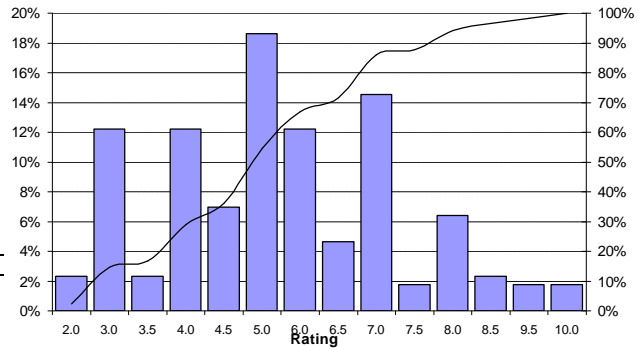
### Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

**Summary Report for Cognitive skill etc.**

Rating	Freq.	Percentage	Cum. Percentage
2	4	2.3%	2.3%
3	21	12.2%	14.5%
3.5	4	2.3%	16.9%
4	21	12.2%	29.1%
4.5	12	7.0%	36.0%
5	32	18.6%	54.7%
6	21	12.2%	66.9%
6.5	8	4.7%	71.5%
7	25	14.5%	86.0%
7.5	3	1.7%	87.8%
8	11	6.4%	94.2%
8.5	4	2.3%	96.5%
9.5	3	1.7%	98.3%
10	3	1.7%	100.0%
<b>Total</b>	<b>172</b>	<b>100.0%</b>	

Number of missing values = 0





### Attachment 3 - Continued

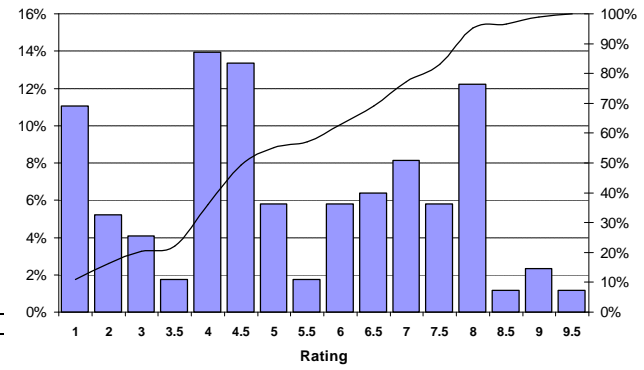
Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1	19	11.0%	11.0%
2	9	5.2%	16.3%
3	7	4.1%	20.3%
3.5	3	1.7%	22.1%
4	24	14.0%	36.0%
4.5	3	13.4%	49.4%
5	10	5.8%	55.2%
5.5	4	1.7%	57.0%
6	10	5.8%	62.8%
6.5	6	6.4%	69.2%
7	14	8.1%	77.3%
7.5	8	5.8%	83.1%
8	21	12.2%	95.3%
8.5	9	1.2%	96.5%
9	4	2.3%	98.8%
9.5	13	1.2%	100.0%
<b>Total</b>	<b>172</b>	<b>100.0%</b>	

Number of missing values = 0

17

20



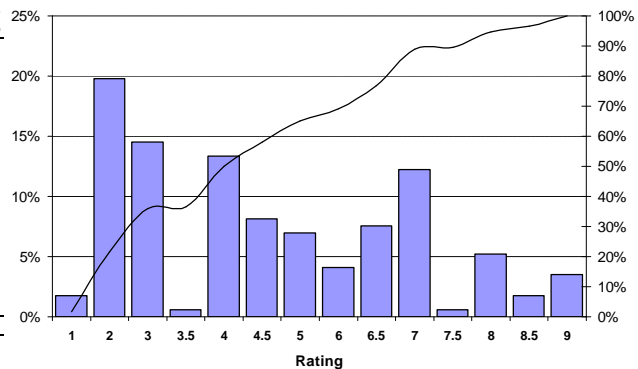
Attachment 3 - Continued

21

Summary Report for Stress

Rating	Freq.	Percentage	Cum. Percentage
1	3	1.7%	1.7%
2	34	19.8%	21.5%
3	25	14.5%	36.0%
3.5	1	0.6%	36.6%
4	23	13.4%	50.0%
4.5	14	8.1%	58.1%
5	12	7.0%	65.1%
6	7	4.1%	69.2%
6.5	13	7.6%	76.7%
7	21	12.2%	89.0%
7.5	1	0.6%	89.5%
8	9	5.2%	94.8%
8.5	3	1.7%	96.5%
9	6	3.5%	100.0%
<b>Total</b>	<b>172</b>	<b>100.0%</b>	

Number of missing values = 0



## Attachment 4 - Links with Other Specialties

The number of link items between Oral and Maxillo-Facial Surgery and the other Consensus Groups is set out below.

**Number of Links with Other Specialties**

Specialty	Consultatio		Total Items
	Procedure Items	n Items	
Gen. Prac. & Emergency Med.	0	0	0
Obstetrics / Gynaecology	0	0	0
General Surgery	0	0	0
Cardio Thoracic Surgery	0	0	0
Neurosurgery	0	16	16
Orthopaedic surgery	0	16	16
Paediatric Surgery	0	0	0
Plastic Surgery	0	8	8
Urology	0	0	0
Vascular Surgery	0	0	0
Ophthalmology	0	0	0
ENT	0	0	0
Anaesthesia	0	16	16
Dermatology	0	0	0
Paediatric / Thoracic Medicine	0	16	16
General Medicine	0	15	15
Cardiology, Renal, ICU	0	0	0
Radiation, Oncology	0	0	0
Gastroenterology	0	0	0
Neurology	0	16	16
Haematology, Medical Oncolog	0	0	0
Psychiatry	0	16	16
<b>Total</b>	0	16	16

## Glossary

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Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: a) being a good map b) having as high a frequency as possible c) being well spread in terms of their rank.
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.

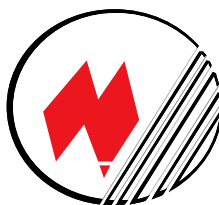
**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**Obstetrics & Gynaecology and IVF  
Summary Status Report**

**December 1999**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

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This document outlines the results of an examination of the information sent to the NCCH by the Obstetrics & Gynaecology and IVF Consensus Group.

The Obstetrics & Gynaecology and IVF Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 152 items. These comprised 147 procedure items and 5 consultation items.

Analysis of this information showed:

- The median ratio of Obstetrics & Gynaecology and IVF's intra time estimates to NCCH's Theatre Times Database observed procedure times was 118.9%. This implies a tendency to over estimate intra times,
- The procedure items were given significantly higher ranks than the consultation items ( $p < 0.05$ ).
- The ranks given to link items were much lower than those given to non-link items ( $p < 0.01$ ).
- The ranks given to good map items were significantly lower than those given to poor/no map items ( $p < 0.05$ ).
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 6.1.
- Given this comparatively large range in relative rates of pay and the comparatively low ranking of the link items, it could be difficult to align the group's rankings and ratings with those of the other groups.
- Consultation items were given lower imputed relative values<sup>1</sup> than procedure items but the difference was not significant.
- The link items were given significantly lower imputed relative values than the non link items.
- The good map items were given significantly lower imputed relative values than the poor/no map items.
- The correlation between the imputed relative values for Obstetrics & Gynaecology and IVF with schedule fee was reasonable ( $R^2 = 74\%$ ).
- The correlation between the imputed relative values for Obstetrics & Gynaecology and IVF with CPT RV was not good ( $R^2 = 69\%$ ).

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for Obstetrics & Gynaecology and IVF are set out in Table 2.1 together with associated standard deviations and ranges.

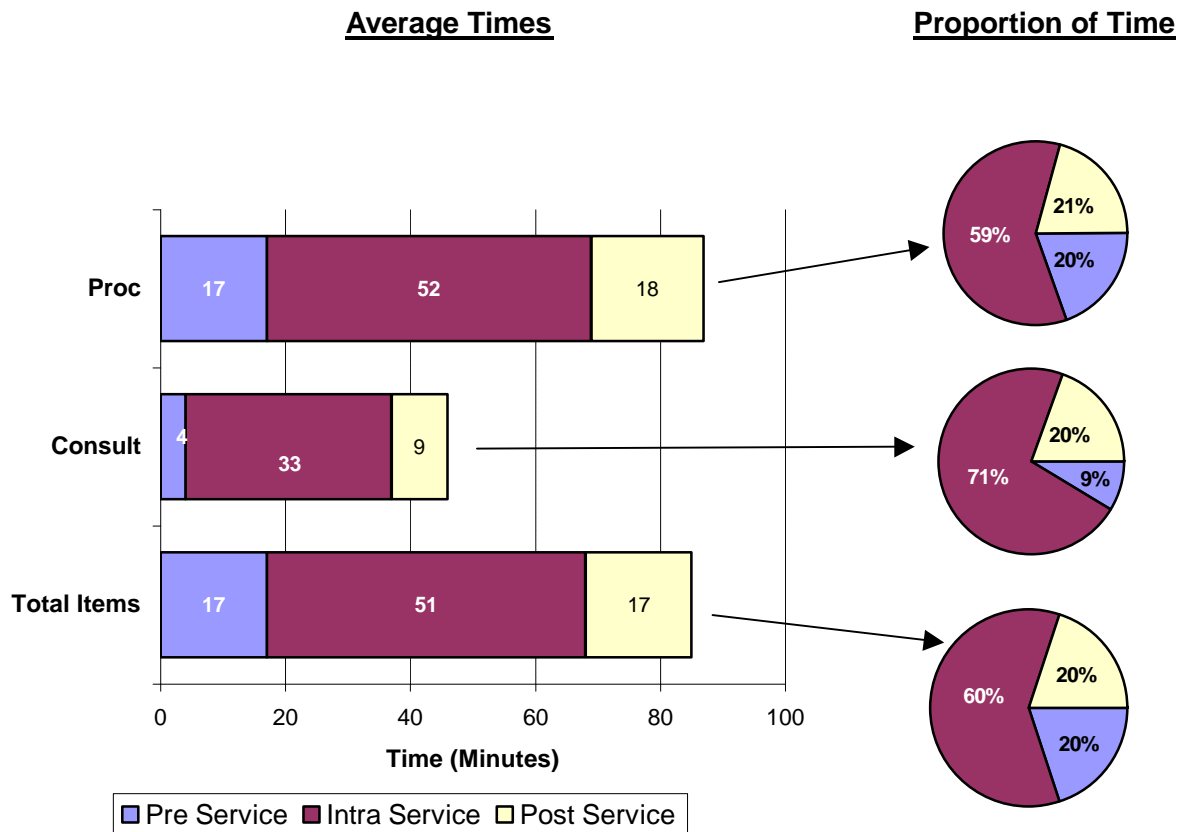
The mean intra service time was 51 minutes and the mean total time was 85 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
<b>Mean</b>	17	51	17	85
<b>SD</b>	5	33	7	42
<b>Min</b>	2	9	4	22
<b>Max</b>	34	160	39	216

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for procedure items, consultation items and all items.

**Figure 2.1**





A summary breakdown is also provided in Table 2.2.

**Table 2.2**

<b>Average Times</b>	<b>Pre Service</b>	<b>Intra Service</b>	<b>Post Service</b>	<b>Total Time</b>
<b>Procedure Items</b>	17.1	51.6	17.7	86.4
<b>Consultation Items</b>	4.4	33.0	9.0	46.4
<b>Total Items</b>	16.7	51.0	17.4	85.1

Obstetrics & Gynaecology and IVF's intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies.

The median ratio of Obstetrics & Gynaecology and IVF's intra time estimates to the observed procedure times was 118.9%. This implies a tendency by this Consensus Group to over estimate their intra times. A more detailed analysis is provided in Attachment 2.

## Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for Obstetrics & Gynaecology and IVF are set out in Table 3.1 together with associated standard deviations and ranges.

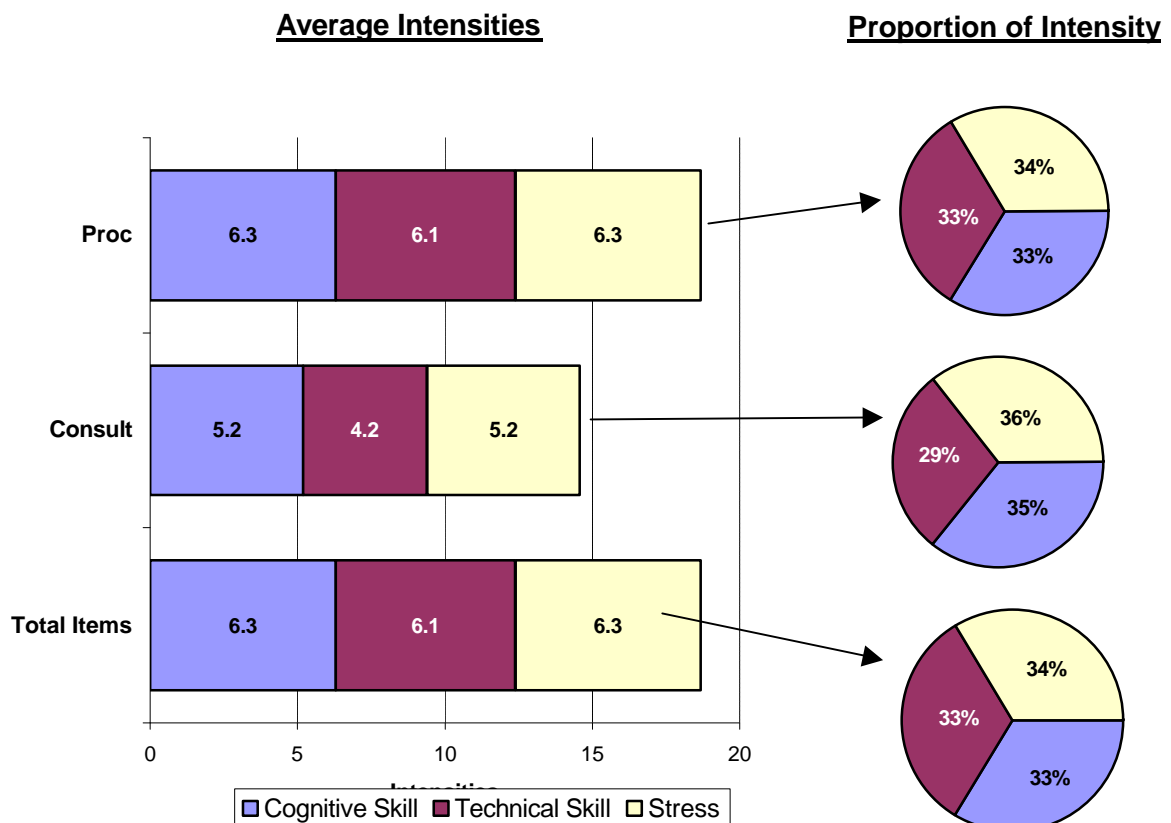
The mean ratings were 6.3 for cognitive skill, 6.1 for technical skill and 6.3 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
<b>Mean</b>	6.3	6.1	6.3	18.7
<b>SD</b>	1.9	2.0	2.0	5.8
<b>Min</b>	1.0	1.0	2.0	5.0
<b>Max</b>	10.0	10.0	10.0	30.0

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. They are provided for procedure items, consultation items and all items.

**Figure 3.1**



A summary breakdown is also provided in Table 3.2.

**Table 3.2**

<b>Intensity Ratings</b>	<b>Cognitive Skill</b>	<b>Technical Skill</b>	<b>Stress</b>	<b>Total Intensity</b>
<b>Procedure Items</b>	6.3	6.1	6.3	18.7
<b>Consultation Items</b>	5.2	4.2	5.2	14.6
<b>Total Items</b>	6.3	6.1	6.3	18.7

<sup>2</sup> Please note that intensity descriptions are abbreviations only.

- a) Cognitive Skill = Cognitive Skill, Clinical Judgement and Communication Skills
- b) Technical Skill = Technical Skill and Physical Effort
- c) Stress = Stress Due to Risk

## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (i.e. time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4.1. The procedure items were given significantly higher ranks than the consultation items (sum of ranks test,  $p < 0.05$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Procedure	147	1	152	75.2
Consultation	5	96	140	115.2
<b>Total</b>	152	1	152	76.5

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. The Obstetrics & Gynaecology and IVF Consensus Group assessed 28 link items. These comprised all 5 of their consultation items and 23 of the 147 procedure items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.2. The ranks given to link items were much lower than those given to non-link items (sum of ranks test,  $p < 0.01$ ).

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Consultation	5	96	140	115.2
Procedure-Link	23	14	152	93.4
<b>Total Link</b>	28	14	152	97.3
<b>Non-Link (Procedure)</b>	124	1	149	71.8
<b>Total</b>	152	1	152	76.5

Good maps of Obstetrics & Gynaecology and IVF items to CPT were available for 33 of their 152 items. A breakdown of the ranks given to these good map items and to the poor/no map items is set out in Table 4.3. The ranks given to good map items were significantly lower than those given to poor/no map items. (sum of ranks test,  $p < 0.05$ ).

Table 4.3

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Good Map	33	10	147.5	92.4
Poor/Non Map	119	1	152	72.1
<b>Total</b>	152	1	152	76.5

## Section 5 Relative Value Implications

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For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analyzed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for Obstetrics & Gynaecology and IVF is 1 to 50.2

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the range in relative rates of pay is 1 to 5.4. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the range in relative rates of pay is 1 to 6.1

These ranges in relative rates of pay are higher than the median observed for specialties examined so far<sup>3</sup>. In terms of deviations in rates of pay, it could be difficult to align Obstetrics & Gynaecology and IVF's rankings and ratings with those of the other groups and this could be compounded because the link items are ranked so low.

<sup>3</sup> The median range in relative rates of pay depending on intensity alone is 1 to 3.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.8.

Comparisons between consultation and procedure items, between link items and non link items and between good map items and poor/no map items in terms of imputed relative value (IRV) are set out in Table 5.1.

The consultation items were given imputed relative values that were lower than those given to the procedure items, but the difference was not significant. The link items were given significantly lower imputed relative values than the non-link items (t tests,  $p < 0.05$  untransformed data,  $p < 0.001$  log transformed data). The range for link items lacks high values which could cause problems with alignment. The good map items were given significantly lower imputed relative values than the poor/no map items (t tests,  $p < 0.05$ ).

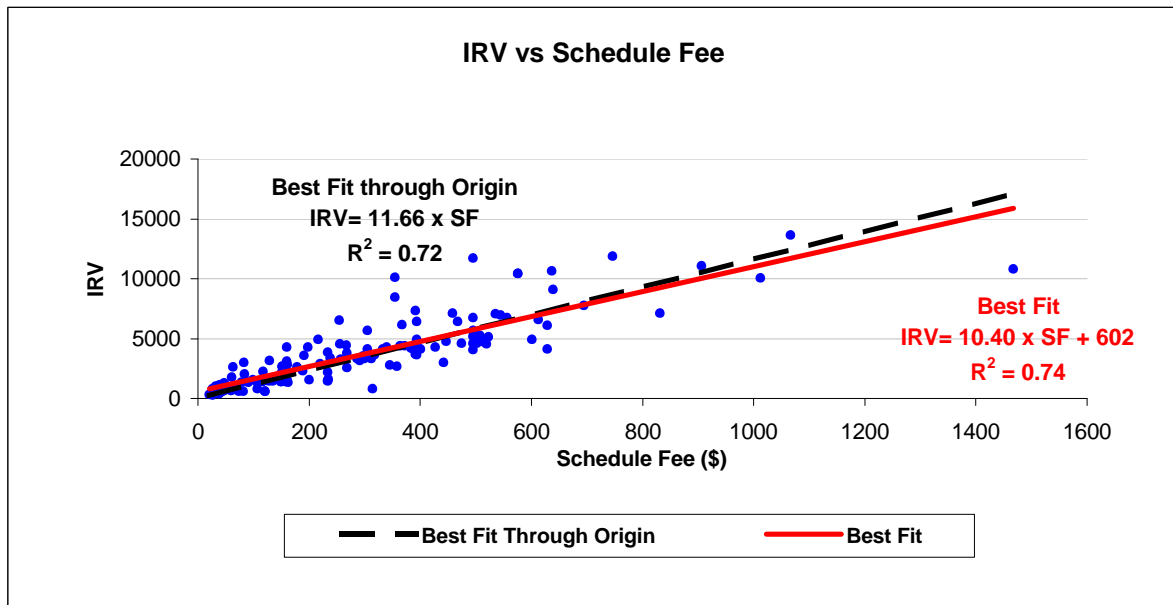
**Table 5.1**

Type of Item	Number Reviewed	IRVs			
		Mean	$\pm$ SD	Low	High
Consultation	5	1443	$\pm$ 570	638.25	1995.00
Procedure	147	3628	$\pm$ 2840	271.25	13630.00
Link	28	2484	$\pm$ 2425	271.25	7326.00
Non-link	124	3799	$\pm$ 2857	420.00	13630.00
Good Map	33	2570	$\pm$ 2053	514.50	10062.00
Poor/No Map	119	3830	$\pm$ 2949	271.25	13630.00
<b>Total</b>	152	3556	$\pm$ 2822	271.25	13630.00

A plot of Obstetrics & Gynaecology and IVF's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is reasonable ( $R^2=0.74$ )<sup>4</sup>. There are three outliers which should be investigated. These comprise MBS item numbers 13200, 35720 and 35723.

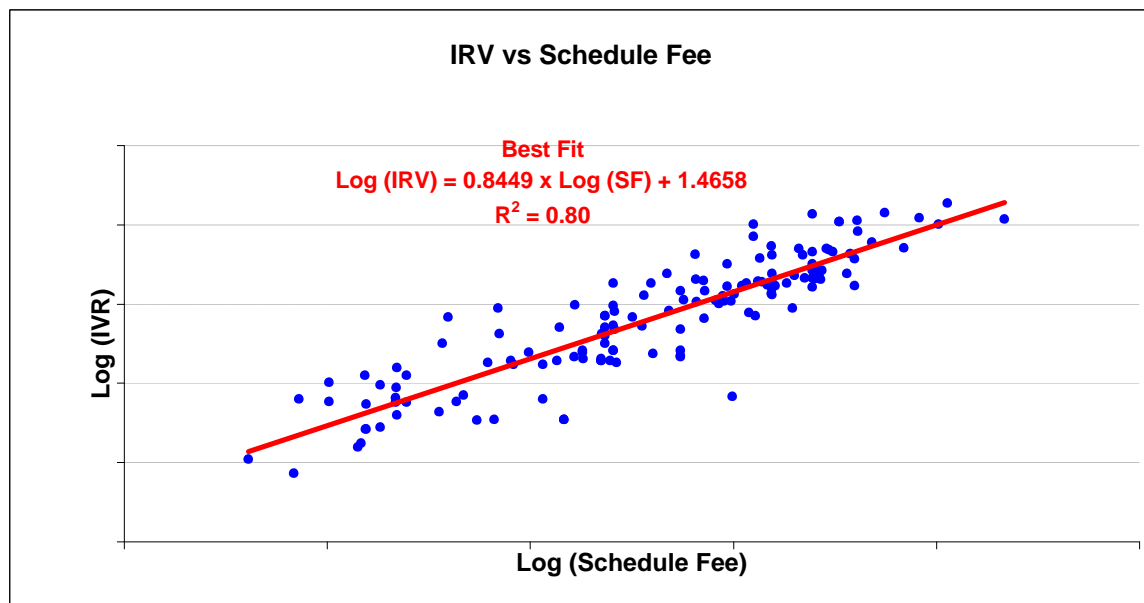
<sup>4</sup> An  $R^2$  value of 0.74 means that the line explains 74% of the variation.

Figure 5.1



We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit explains 80% of the variation as against 74% previously. There are again a number of outliers which should be investigated. These are MBS item numbers 11912, 11918, 13209 and 16636 in addition to 35723, which was mentioned previously.

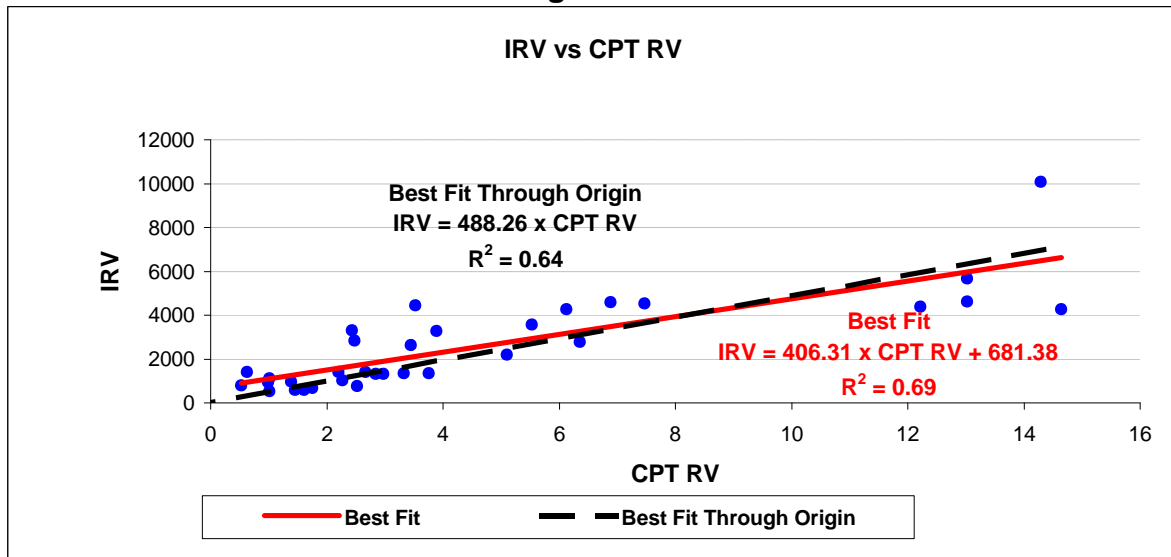
Figure 5.2





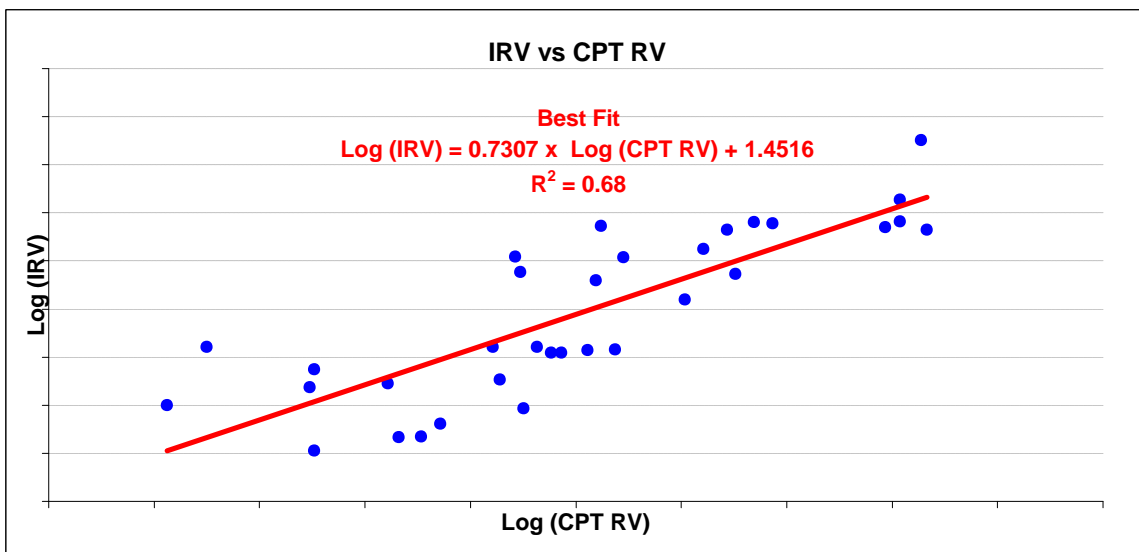
A plot of Obstetrics & Gynaecology and IVF IRVs against CPT RV is set out in Figure 5.3. The fit is not good ( $R^2 = 0.69$ ). There are three outliers which should be investigated. These are MBS item numbers 13212, 35561 and 35680.

Figure 5.3



A log/log plot is also provided (Figure 5.4). The transformation does not improve the fit.

Figure 5.4

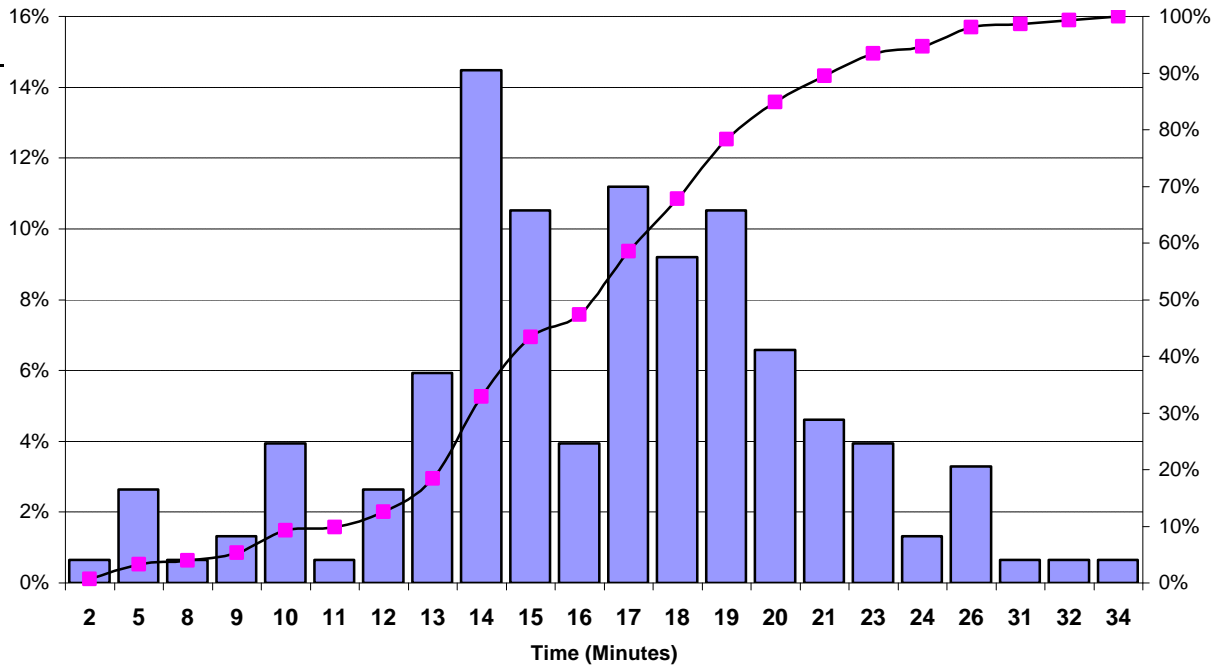


# Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

## Summary Report for Pre-Service Time

Time	Freq.	Percentage	Cum. Percentage
2	1	0.7%	0.7%
5	4	2.6%	3.3%
8	1	0.7%	3.9%
9	2	1.3%	5.3%
10	6	3.9%	9.2%
11	1	0.7%	9.9%
12	4	2.6%	12.5%
13	9	5.9%	18.4%
14	22	14.5%	32.9%
15	16	10.5%	43.4%
16	6	3.9%	47.4%
17	17	11.2%	58.6%
18	14	9.2%	67.8%
19	16	10.5%	78.3%
20	10	6.6%	84.9%
21	7	4.6%	89.5%
23	6	3.9%	93.4%
24	2	1.3%	94.7%
26	5	3.3%	98.0%
31	1	0.7%	98.7%
32	1	0.7%	99.3%
34	1	0.7%	100.0%
Total	152	100.0%	

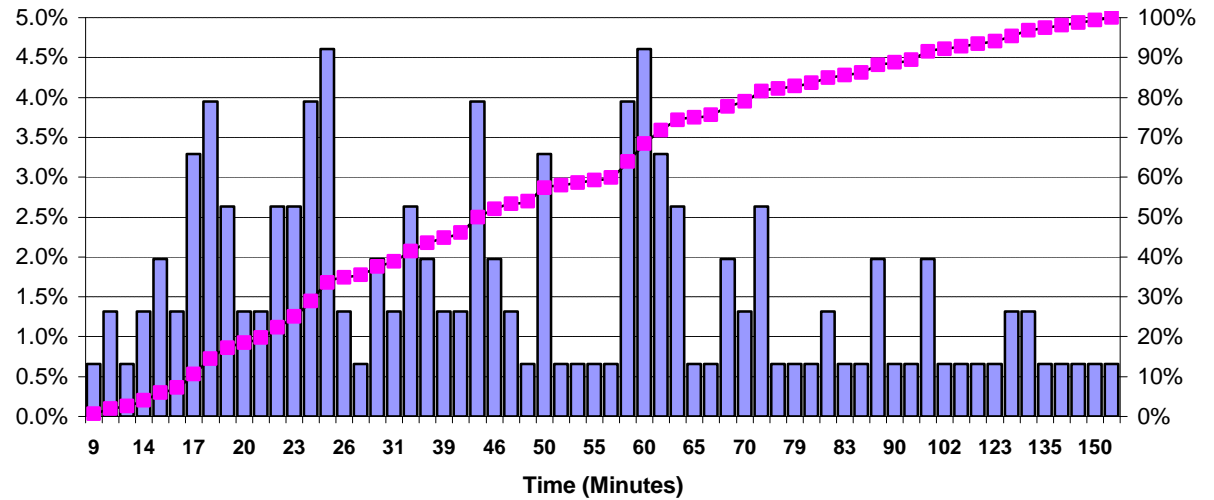


Number of missing values = 0

# Attachment 1 - Continued

## Summary Report for Intra-Service Time

Time	Freq.	Percentage	Cum. Percentage
9	1	0.7%	0.7%
12	2	1.3%	2.0%
13	1	0.7%	2.6%
14	2	1.3%	3.9%
15	3	2.0%	5.9%
16	2	1.3%	7.2%
17	5	3.3%	10.5%
18	6	3.9%	14.5%
19	4	2.6%	17.1%
20	2	1.3%	18.4%
21	2	1.3%	19.7%
22	4	2.6%	22.4%
23	4	2.6%	25.0%
24	6	3.9%	28.9%
25	7	4.6%	33.6%
26	2	1.3%	34.9%
29	1	0.7%	35.5%
30	3	2.0%	37.5%
31	2	1.3%	38.8%
32	4	2.6%	41.4%
35	3	2.0%	43.4%
39	2	1.3%	44.7%
42	2	1.3%	46.1%
45	6	3.9%	50.0%
46	3	2.0%	52.0%
47	2	1.3%	53.3%
49	1	0.7%	53.9%
50	5	3.3%	57.2%
52	1	0.7%	57.9%
53	1	0.7%	58.6%
55	1	0.7%	59.2%



continued next page

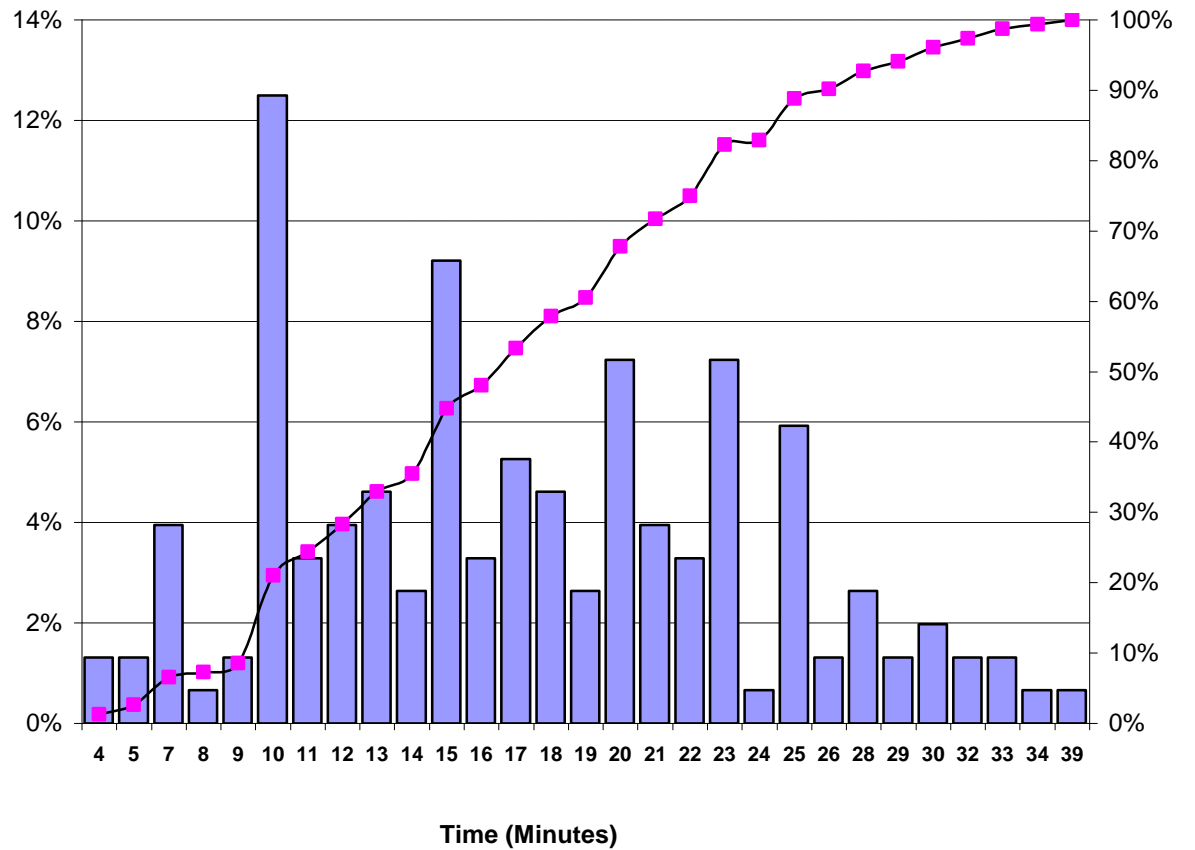
56	1	0.7%	59.9%
59	6	3.9%	63.8%
60	7	4.6%	68.4%
62	5	3.3%	71.7%
63	4	2.6%	74.3%
65	1	0.7%	75.0%
66	1	0.7%	75.7%
67	3	2.0%	77.6%
70	2	1.3%	78.9%
75	4	2.6%	81.6%
76	1	0.7%	82.2%
79	1	0.7%	82.9%
80	1	0.7%	83.6%
82	2	1.3%	84.9%
83	1	0.7%	85.5%
84	1	0.7%	86.2%
88	3	2.0%	88.2%
90	1	0.7%	88.8%
92	1	0.7%	89.5%
100	3	2.0%	91.4%
102	1	0.7%	92.1%
104	1	0.7%	92.8%
112	1	0.7%	93.4%
123	1	0.7%	94.1%
129	2	1.3%	95.4%
132	2	1.3%	96.7%
135	1	0.7%	97.4%
138	1	0.7%	98.0%
140	1	0.7%	98.7%
150	1	0.7%	99.3%
160	1	0.7%	100.0%
Total	152	100.0%	

Number of missing values = 0

# Attachment 1 - Continued

## Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
4	2	1.3%	1.3%
5	2	1.3%	2.6%
7	6	3.9%	6.6%
8	1	0.7%	7.2%
9	2	1.3%	8.6%
10	19	12.5%	21.1%
11	5	3.3%	24.3%
12	6	3.9%	28.3%
13	7	4.6%	32.9%
14	4	2.6%	35.5%
15	14	9.2%	44.7%
16	5	3.3%	48.0%
17	8	5.3%	53.3%
18	7	4.6%	57.9%
19	4	2.6%	60.5%
20	11	7.2%	67.8%
21	6	3.9%	71.7%
22	5	3.3%	75.0%
23	11	7.2%	82.2%
24	1	0.7%	82.9%
25	9	5.9%	88.8%
26	2	1.3%	90.1%
28	4	2.6%	92.8%
29	2	1.3%	94.1%
30	3	2.0%	96.1%
32	2	1.3%	97.4%
33	2	1.3%	98.7%
34	1	0.7%	99.3%
39	1	0.7%	100.0%
<b>Total</b>	<b>152</b>	<b>100.0%</b>	



Number of missing values = 0

**COMPARISON OF OBSTETRICS AND GYNAECOLOGY / IVF (O&G)  
INTRA TIME ESTIMATES WITH OTHER ESTIMATES**

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x O&G/OTE
	ID	Type	Definition of Time *		O&G	OTE	
OST	H4	Priv	Knife to Skin -to- Dressing Applied	40	51.1	47.5	107.5
	H6	Priv	Knife to Skin -to- Drapes Removed	49	51.9	51.0	101.7
	H11	Priv	Pt Prepped -to- Drapes Removec	38	49.9	65.1	76.6
OPERATION TIME ** (OPT)	H1	Priv	Pt Positioned -to- Drapes Removed	32	54.9	46.0	119.4
	H8	Priv	Pt Positioned -to- Drapes Removed	52	51.7	35.0	147.8
	H10	Priv	Pt Positioned -to- Drapes Removed	11	49.6	34.6	143.2
	H13	Priv	Pt Positioned -to- Drapes Removed	30	56.6	41.0	138.1
	H15	Priv	Pt Positioned -to- Drapes Removed	29	50.2	42.2	118.9
	H16	Pub	Pt Positioned -to- Dressing Applied	5	58.4	77.7	75.2
	H17	Pub	Surgeon with Pt -to- Drapes Removed	13	64.7	72.0	89.8
	H18	Priv	Pt Positioned -to- Drapes Removed	63	53.4	33.7	158.6
	H19	Pub	Pt Positioned -to- Dressing Applied	50	55.2	51.4	107.4
	H20	Pub	Pt Positioned -to- Dressing Applied	51	47.4	37.3	127.1
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	54	57.5	57.6	99.9
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	68	56.1	53.5	105.0
Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removec	38	54.6	46.0	118.6	
OPERATION TIME 2 (OPT 2)	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	52	51.7	39.4	131.1
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	25	61.1	55.6	110.0
	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	14	40.9	29.8	137.5
	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	29	56.5	46.3	121.9
	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	29	50.2	45.7	109.8
	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	5	58.4	84.1	69.4
	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	13	64.7	78.6	82.3
	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	66	53.1	41.2	129.0
	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	67	51.5	47.3	108.8
	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	49	46.0	43.9	104.7
CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staff	70	56.4	57.2	98.5	
ANAESTHETIC TIME (OAT)	H1	Priv	Prep. Anaes. -to- Drapes Removed	34	56.2	61.6	91.4
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	40	54.4	82.9	65.6
	H6	Priv	Prep. Anaes. -to- Drapes Removed	51	50.6	59.5	85.1
	H8	Priv	Prep. Anaes. -to- Drapes Removed	52	51.7	46.2	111.8
	H10	Priv	Prep. Anaes. -to- Drapes Removed	12	49.6	51.5	96.2
	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	29	56.5	56.7	99.5
	H15	Priv	Induction of Anaes -to- Drapes Removed	29	50.2	52.7	95.2
	H16	Pub	Prep. Anaes. -to- Dressing Applied	5	58.4	92.4	63.2
	H17	Pub	Prep. Anaes. -to- Drapes Removed	13	64.7	98.6	65.6
	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	66	54.1	49.7	108.8
	H19	Pub	Prep. Anaes. -to- Dressing Applied	51	54.7	68.1	80.3
	H20	Pub	Prep. Anaes. -to- Dressing Applied	50	48.1	53.4	90.0
	CANS	Pub & Priv	Prep. Anaes. -to- Surg.Leaves Pt	69	56.2	59.3	94.8
Deloitte	Pub & Priv	Induction of Anaes. -to- Drapes Removec	41	52.6	54.4	96.6	
ANAESTHETIC TIME 2 (OAT 2)	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	108	53.0	77.5	68.4
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	31	54.8	62.4	87.9
	H7	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	12	37.1	25.2	146.9
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	55	50.7	48.8	103.9
	H9A	Priv	Prep. Anaes. -to- Trans. to Recovery Staff	26	59.6	63.6	93.7
	H9B	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	14	40.9	41.4	98.8
	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	41	48.2	79.9	60.3
	H12	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	17	41.4	50.2	82.4
	H14	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	56	50.8	59.3	85.7
	H15	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	28	50.9	57.9	87.8
	H16	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	5	58.4	98.8	59.1
	H17	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	13	64.7	105.2	61.5
	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	70	50.7	66.6	76.1
	H20	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	50	47.1	62.9	74.9
	CANS	Pub & Priv	Prep. Anaes. -to- Trans. to Recovery Staff	69	56.2	64.2	87.5
WAGroup	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	89	50.6	51.7	98.0	
TIME IN THEATRE (THT)	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	64	55.7	59.7	93.2
	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	22	47.3	34.2	138.6
	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	42	47.6	94.7	50.3
	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	29	56.5	61.5	91.7
	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	28	50.9	67.2	75.7
	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	68	53.0	54.0	98.3
	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	69	51.2	82.6	62.0
	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	53	36.1	29.9	120.9
	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	83	39.4	33.3	118.3
C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staff	25	30.0	22.5	133.3	

\* Definition of Time  
- see Attachment A

\*\* Median ratio of O&G intra time estimates to OPT  
Unweighted = 118.9 %  
Weighted (for number of items in common) = 118.9 %

**THEATRE TIMES DEFINITIONS - STANDARDISED FROM HOSPITALS AND OTHER SOURCES**

PATHWAYS FOR SURGEON AND ANAESTHETIST			PT ENTERS OP SUITE	PT ENTERS ANAESTHETIC BAY OR OPERATING ROOM			START OF TIME						END OF TIME		XFER TO RECOV	XFER FROM RECOV
				Anaesth. arrives to talk to Pt	Anaesth. prepares Pt for anaes-cannula/lines insertion	Anaes. Commence admin/induction of anaes	Surg. with Pt after anaes induction	Pt is positioned	Pt is draped	Pt is prep'ed	Knife to skin	Wound Closure	Dressing Applied	Drapes Removed	Surgical Team leave Pt	
ID	TIME	TYPE														
Hosp4	H4OST	Priv														
Hosp6	H6OST	Priv														
Hosp11	H11OST	Priv														
Hosp1	H1OPT	Priv														
Hosp8	H8OPT	Priv														
Hosp10	H10OPT	Priv														
Hosp13	H13OPT	Priv														
Hosp15	H15OPT	Priv														
Hosp16	H16OPT	Pub														
Hosp17	H17OPT	Pub														
Hosp18	H18OPT	Priv														
Hosp19	H19OPT	Pub														
Hosp20	H20OPT	Pub														
APHA	APHAOPT	Priv														
CANS	CANSOPT	Pub & Priv														
Deloitte	DTOPT	Pub & Priv														
Hosp8	H8OPT2	Priv														
Hosp9A	H9AOPT2	Priv														
Hosp9B	H9BOPT2	Priv/Day														
Hosp13	H13OPT2	Priv														
Hosp15	H15OPT2	Priv														
Hosp16	H16OPT2	Pub														
Hosp17	H17OPT2	Pub														
Hosp18	H18OPT2	Priv														
Hosp19	H19OPT2	Pub														
Hosp20	H20OPT2	Pub														
CANS	CANSOPT2	Pub & Priv														
Hosp1	H1OAT	Priv														
Hosp4	H4OAT	Priv														
Hosp6	H6OAT	Priv														
Hosp8	H8OAT	Priv														
Hosp10	H10OAT	Priv														
Hosp13	H13OAT	Priv														
Hosp15	H15OAT	Pub														
Hosp16	H16OAT	Pub														
Hosp17	H17OAT	Priv														
Hosp18	H18OAT	Pub														
Hosp19	H19OAT	Pub														
Hosp20	H20OAT	Pub & Priv														
CAnS	CANSOAT	Pub & Priv														
Deloitte	DTOAT	Pub & Priv														
MBS	MBSOAT2	Pub & Priv														
Hosp5	H5OAT2	Priv														
Hosp7	H7OAT2	Priv/Day														
Hosp8	H8OAT2	Priv														
Hosp9A	H9A OAT2	Priv														
Hosp9B	H9B OAT2	Priv/Day														
Hosp11	H11OAT2	Priv														
Hosp12	H12OAT2	Pub														
Hosp14	H14OAT2	Pub														
Hosp15	H15OAT2	Priv														
Hosp16	H16OAT2	Pub														
Hosp17	H17OAT2	Pub														
Hosp19	H19OAT2	Pub														
Hosp20	H20OAT2	Pub														
CANS	CANSOAT2	Pub & Priv														
WAGroup	WAOAT2	Priv														
Hosp2	H2THT	Priv														
Hosp3	H3THT	Pub														
Hosp11	H11THT	Pub														
Hosp13	H13THT	Priv														
Hosp15	H15THT	Priv														
Hosp18	H18THT	Priv														
Hosp19	H19THT	Day & Other														
C'mix -Pub	CMXPVHTHT	Priv														
C'mix -Pte	CMXPVHTHT	Priv														
C'mix-oth	CMXOTHTHT	Priv														

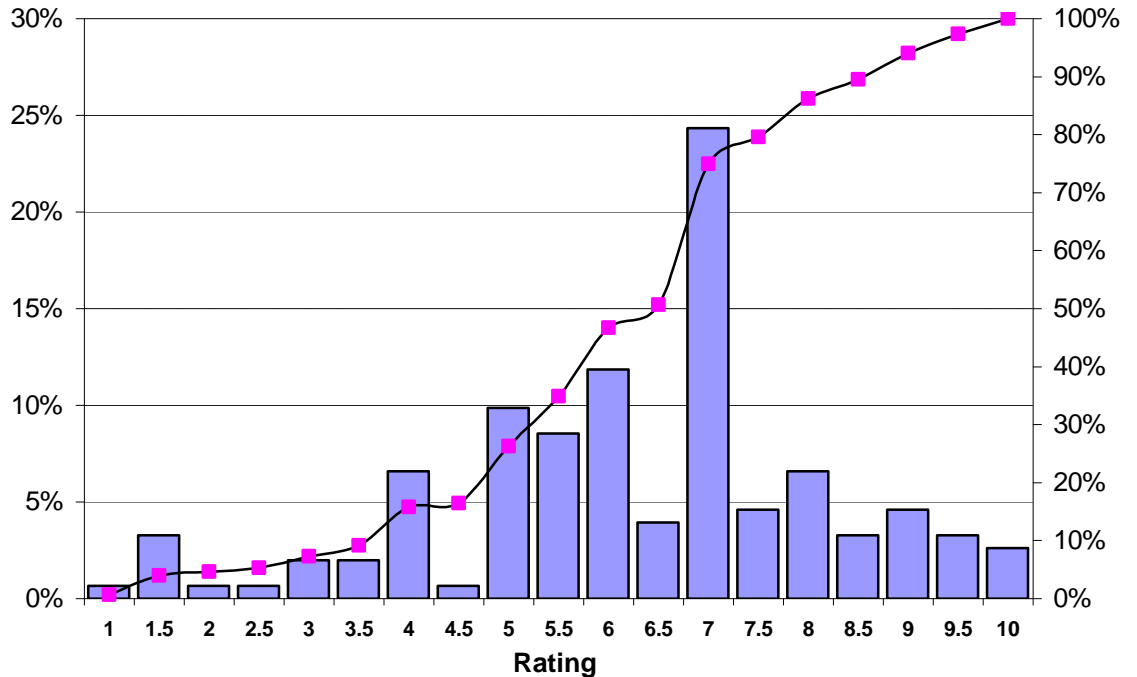
KEY: | = Hospitals where start/end times are defined by > 1 pathway time option

## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1	1	0.7%	0.7%
1.5	5	3.3%	3.9%
2	1	0.7%	4.6%
2.5	1	0.7%	5.3%
3	3	2.0%	7.2%
3.5	3	2.0%	9.2%
4	10	6.6%	15.8%
4.5	1	0.7%	16.4%
5	15	9.9%	26.3%
5.5	13	8.6%	34.9%
6	18	11.8%	46.7%
6.5	6	3.9%	50.7%
7	37	24.3%	75.0%
7.5	7	4.6%	79.6%
8	10	6.6%	86.2%
8.5	5	3.3%	89.5%
9	7	4.6%	94.1%
9.5	5	3.3%	97.4%
10	4	2.6%	100.0%
Total	152	100.0%	



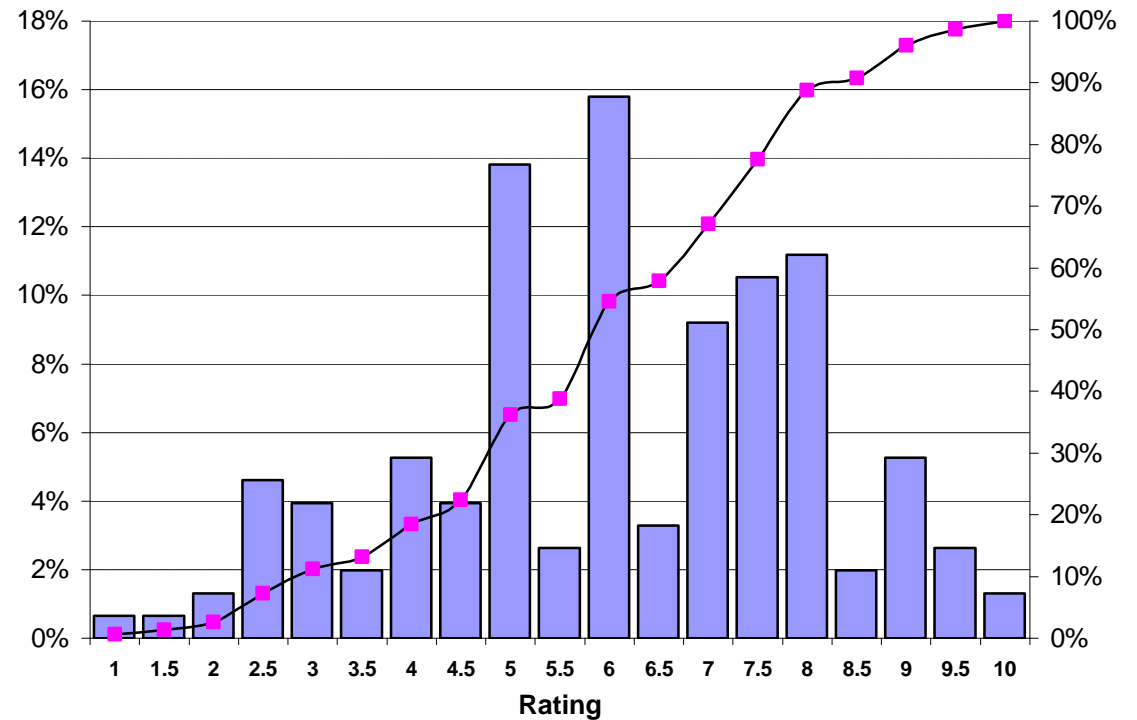
Number of missing values = 0



## Attachment 3 - Continued

### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1	1	0.7%	0.7%
1.5	1	0.7%	1.3%
2	2	1.3%	2.6%
2.5	7	4.6%	7.2%
3	6	3.9%	11.2%
3.5	3	2.0%	13.2%
4	8	5.3%	18.4%
4.5	6	3.9%	22.4%
5	21	13.8%	36.2%
5.5	4	2.6%	38.8%
6	24	15.8%	54.6%
6.5	5	3.3%	57.9%
7	14	9.2%	67.1%
7.5	16	10.5%	77.6%
8	17	11.2%	88.8%
8.5	3	2.0%	90.8%
9	8	5.3%	96.1%
9.5	4	2.6%	98.7%
10	2	1.3%	100.0%
Total	152	100.0%	

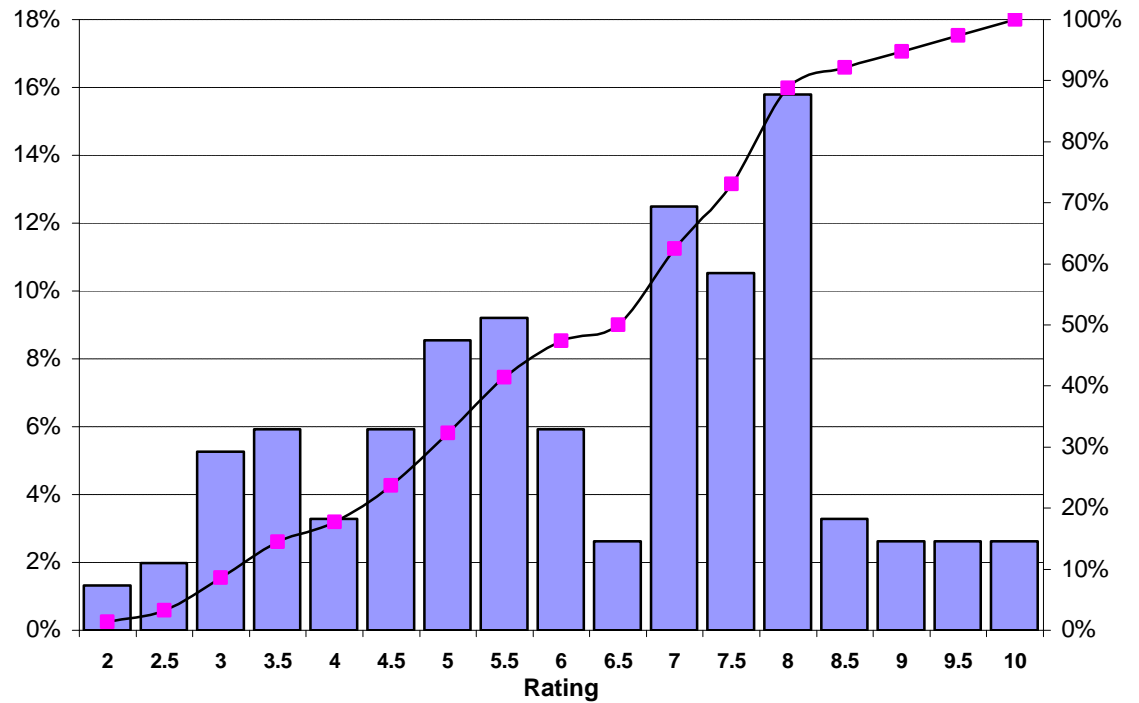


Number of missing values = 0

## Attachment 3 - Continued

### Summary Report for Stress

Rating	Freq.	Percentage	Cum. Percentage
2	2	1.3%	1.3%
2.5	3	2.0%	3.3%
3	8	5.3%	8.6%
3.5	9	5.9%	14.5%
4	5	3.3%	17.8%
4.5	9	5.9%	23.7%
5	13	8.6%	32.2%
5.5	14	9.2%	41.4%
6	9	5.9%	47.4%
6.5	4	2.6%	50.0%
7	19	12.5%	62.5%
7.5	16	10.5%	73.0%
8	24	15.8%	88.8%
8.5	5	3.3%	92.1%
9	4	2.6%	94.7%
9.5	4	2.6%	97.4%
10	4	2.6%	100.0%
<b>Total</b>	<b>152</b>	<b>100.0%</b>	



Number of missing values = 0

## Attachment 4 - Links with Other Specialties

The number of link items between Obstetrics/Gynaecology and IVF and the other Consensus Groups is set out below.

**Number of Links with Other Specialties**

<b>Specialty</b>	<b>Procedure Items</b>	<b>Consultation Items</b>	<b>Total Items</b>
Gen. Prac. & Emergency Med.	10	0	10
Oral and Maxillo-facial Surgery	0	5	5
General Surgery	1	5	6
Cardio Thoracic Surgery	0	0	0
Neurosurgery	0	5	5
Orthopaedic surgery	0	5	5
Paediatric Surgery	0	4	4
Plastic Surgery	1	0	1
Urology	11	0	11
Vascular Surgery	0	0	0
Ophthalmology	0	0	0
ENT	0	1	1
Anaesthesia	0	5	5
Dermatology	0	3	3
Paediatric / Thoracic Medicine	0	5	5
General Medicine	5	5	10
Cardiology, Renal, ICU	0	0	0
Radiation, Oncology	0	5	5
Gastroenterology	0	5	5
Neurology	0	5	5
Haematology, Medical Oncology	0	0	0
Psychiatry	0	5	5
<b>Total</b>	<b>23</b>	<b>5</b>	<b>28</b>

## Glossary

---

Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: <ul style="list-style-type: none"> <li>a) being a good map</li> <li>b) having as high a frequency as possible</li> <li>c) being well spread in terms of their rank.</li> </ul>
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.

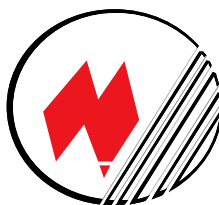
**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**General Surgery  
Summary Status Report**

**January 2000**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

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This document outlines the results of an examination of the information sent to the NCCH by the General Surgery Consensus Group.

The General Surgery Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 380 items. These comprised 358 procedure items and 22 consultation items.

Analysis of this information showed:

- The median ratio of General Surgery's intra time estimates to NCCH's Theatre Time Database observed procedure times was 124.8%. This implies a tendency to over estimate intra times.
- The procedure items were given very much higher ranks than the consultation items ( $p < 0.001$ ).
- The ranks given to link items were very much lower than those given to non-link items ( $p < 0.001$ ).
- The ranks given to good map items were not significantly different from those given to poor/no map items.
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 4.2.
- Given the comparatively low ranking of the link items, it could be difficult to align the group's rankings and ratings with those of the other groups.
- Consultation items were given very much lower imputed relative values<sup>1</sup> than procedure items.
- The link items were given very much lower imputed relative values than the non-link items.
- There was no significant difference in the imputed relative values given to good map items and those given to the poor/no map items.
- The correlation between the imputed relative values for General Surgery and schedule fee was good ( $R^2 = 89\%$ ).
- The correlation between the imputed relative values for General Surgery and CPT RV was also good ( $R^2 = 85\%$ ).

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for General Surgery are set out in Table 2.1 together with associated standard deviations and ranges.

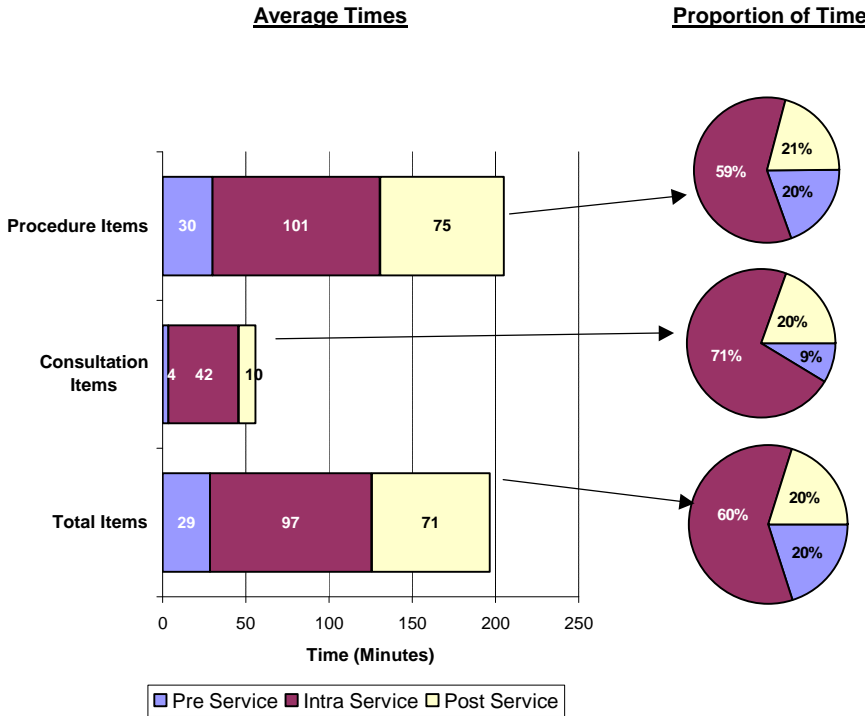
The mean intra service time was 97 minutes and the mean total time was 197 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
<b>Mean</b>	17	51	17	85
<b>SD</b>	5	33	7	42
<b>Min</b>	2	9	4	22
<b>Max</b>	34	160	39	216

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for procedure items, consultation items and all items.

**Figure 2.1**





A summary breakdown is also provided in Table 2.2.

**Table 2.2**

<b>Average Times</b>	<b>Pre Service</b>	<b>Intra Service</b>	<b>Post Service</b>	<b>Total Time</b>
<b>Procedure Items</b>	17.1	51.6	17.7	86.4
<b>Consultation Items</b>	4.4	33.0	9.0	46.4
<b>Total Items</b>	16.7	51.0	17.4	196.7

General Surgery's intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies.

The median ratio of General Surgery's intra time estimates to the observed procedure times was 124.8%. This implies a tendency by this Consensus Group to over estimate their intra times. A more detailed analysis is provided in Attachment 2.

### Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for General Surgery are set out in Table 3.1 together with associated standard deviations and ranges.

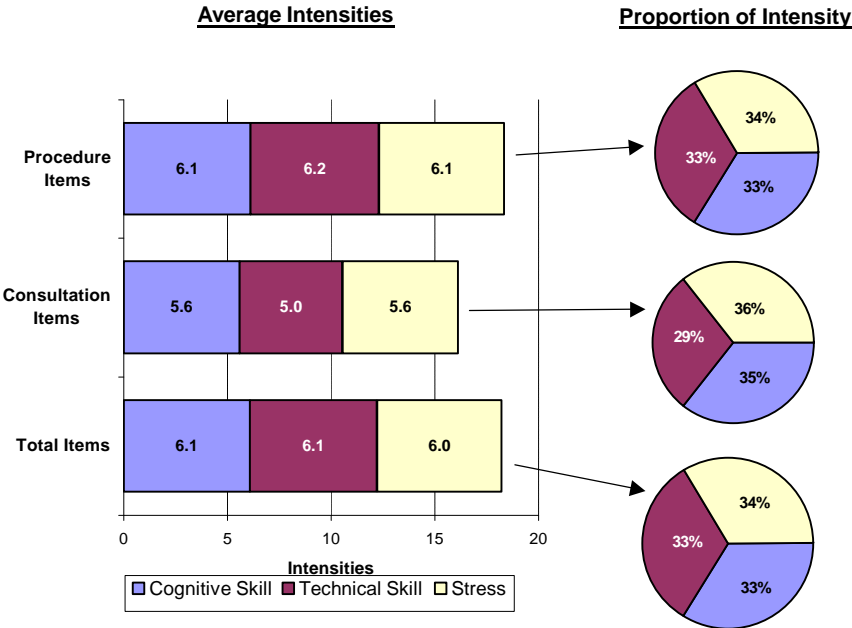
The mean ratings were 6.1 for cognitive skill, 6.1 for technical skill and 6.0 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
<b>Mean</b>	6.3	6.1	6.3	18.2
<b>SD</b>	1.9	2.0	2.0	5.8
<b>Min</b>	1.0	1.0	2.0	5.0
<b>Max</b>	10.0	10.0	10.0	30.0

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. They are provided for procedure items, consultation items and all items.

**Figure 3.1**



A summary breakdown is also provided in Table 3.2.

**Table 3.2**

<b>Intensity Ratings</b>	<b>Cognitive Skill</b>	<b>Technical Skill</b>	<b>Stress</b>	<b>Total Intensity</b>
<b>Procedure Items</b>	6.3	6.1	6.3	18.4
<b>Consultation Items</b>	5.2	4.2	5.2	16.2
<b>Total Items</b>	6.3	6.1	6.3	18.2

<sup>2</sup> Please note that intensity descriptions are abbreviations only.

- a) Cognitive Skill = Cognitive Skill, Clinical Judgement and Communication Skills
- b) Technical Skill = Technical Skill and Physical Effort
- c) Stress = Stress Due to Risk

## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (i.e. time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4.1. The procedure items were given very much higher ranks than the consultation items (sum of ranks test,  $p < 0.001$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Procedure	358	1	380	184.5
Consultation	22	214	377	288.2
<b>Total</b>	<b>380</b>	<b>1</b>	<b>380</b>	<b>190.5</b>

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. The General Surgery Consensus Group assessed 109 link items. These comprised all 22 of their consultation items and 87 of the 358 procedure items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.2. The ranks given to link items were very much lower than those given to non-link items (sum of ranks test,  $p < 0.001$ ).

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Consultation	22	214	377	288.2
Procedure-Link	87	7	380	269.5
<b>Total Link</b>	<b>109</b>	<b>7</b>	<b>380</b>	<b>273.3</b>
<b>Non-Link (Procedure)</b>	<b>271</b>	<b>1</b>	<b>379</b>	<b>157.2</b>
<b>Total</b>	<b>380</b>	<b>1</b>	<b>380</b>	<b>190.5</b>

Good maps of General Surgery's items to CPT were available for 113 of their 380 items. A breakdown of the ranks given to these good map items and to the poor/no map items is set out in Table 4.3. The ranks given to the good map items were not significantly different from those given to the poor/no map items. This implies that good map items (i.e. potential core items) are well spread throughout the ranks.

**Table 4.3**

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
<b>Good Map</b>	113	5	380	187.7
<b>Poor/No Map</b>	267	1	377	191.7
<b>Total</b>	380	1	380	190.5

## Section 5 Relative Value Implications

---

For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analyzed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for General Surgery is 1 to 91.7.

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the range in relative rates of pay is 1 to 3.0. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the range in relative rates of pay is 1 to 4.2.

When compared with specialties examined so far, the first range in relative rates of pay corresponds to the median<sup>3</sup> and the second is slightly lower. In terms of deviations in rates of pay, it should therefore be possible to align General Surgery's rankings and ratings with those of the other groups.

<sup>3</sup> The median range in relative rates of pay depending on intensity alone is 1 to 3.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.5.

Comparisons between consultation and procedure items, between link items and non link items and between good map items and poor/no map items in terms of imputed relative value (IRV) are set out in Table 5.1.

The consultation items were given imputed relative values that were very much lower than those given to the procedure items (t tests,  $p < 0.001$ ). The link items were given very much lower imputed relative values than the non-link items (t tests,  $p < 0.001$ ). The good map items were given imputed relative values that were not significantly different from those given to poor/no map items.

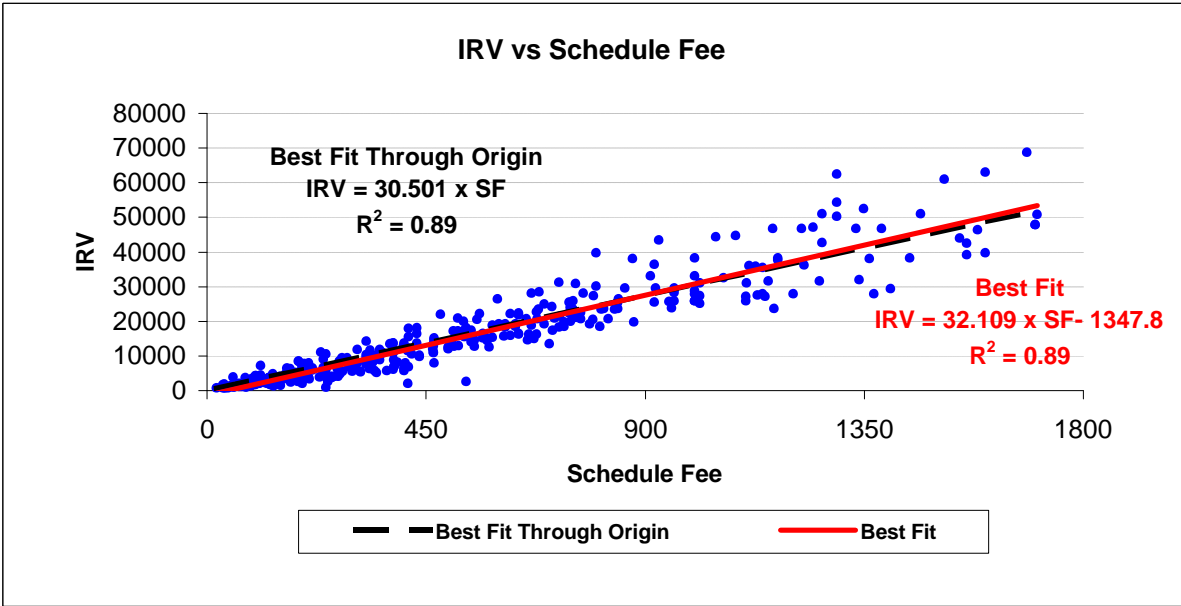
**Table 5.1**

Type of Item	Number Reviewed	IRVs			
		Mean	$\pm$ SD	Low	High
<b>Procedure</b>	358	15705	$\pm$ 13742	748	68638
<b>Consultation</b>	22	4354	$\pm$ 2382	800	8048
<b>Link</b>	109	6313	$\pm$ 8451	748	51064
<b>Non-link</b>	271	18562	$\pm$ 13721	795	68638
<b>Good Map</b>	113	14427	$\pm$ 11720	748	54270
<b>Poor/No Map</b>	267	15311	$\pm$ 14348	800	68638
<b>Total</b>	380	15048	$\pm$ 13610	748	68638

A plot of General Surgery's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is good ( $R^2 = 0.89$ )<sup>4</sup>. However the outlier MBS item number 30294 should be investigated.

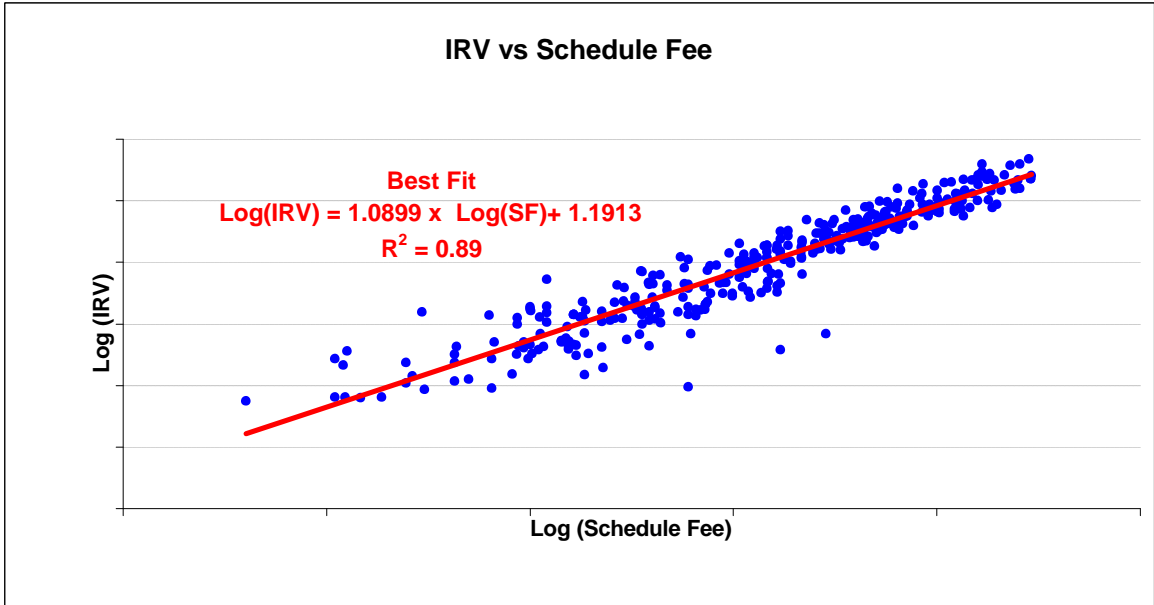
<sup>4</sup> An  $R^2$  value of 0.89 means that the line explains 89% of the variation.

Figure 5.1



We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit is unchanged. There are three outliers which should be investigated. These are MBS item numbers 30493, 30568 and 32186.

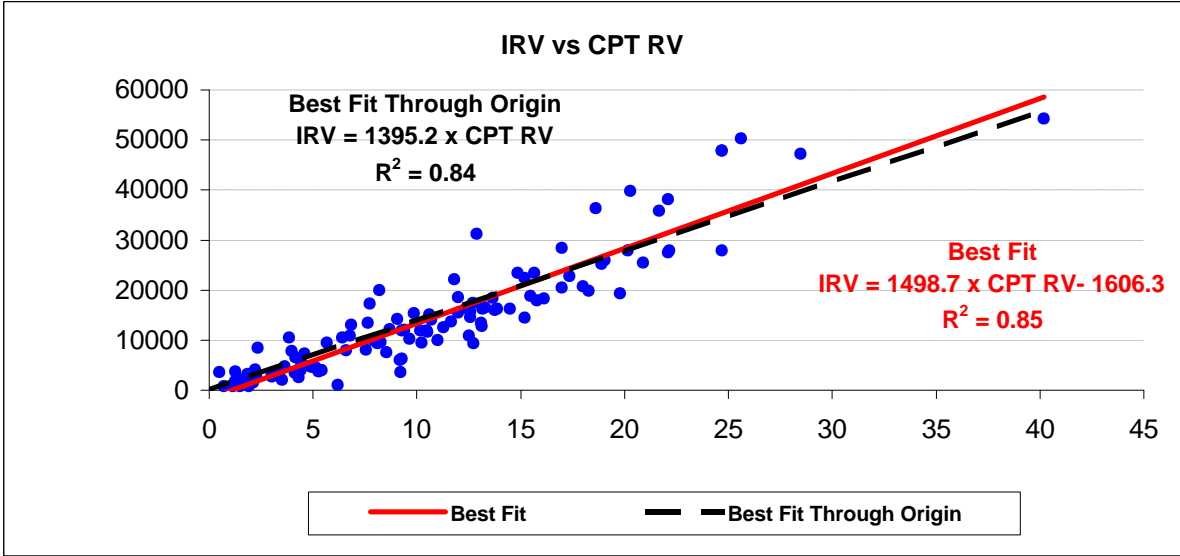
Figure 5.2





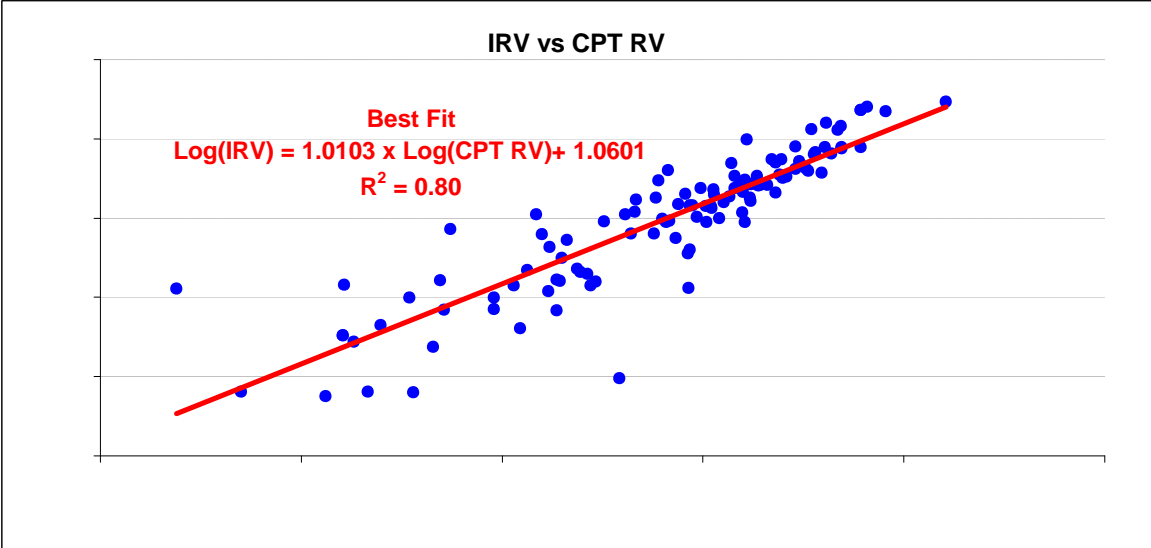
A plot of General Surgery's IRVs against CPT RV is set out in Figure 5.3. The fit is good ( $R^2 = 0.85$ ) and the results are consistent with a simple proportional relationship between the scales. There are four outliers, MBS item numbers 30275, 30328, 32051 and 32060 which should be investigated.

Figure 5.3



A log/log plot is also provided (Figure 5.4). The fit explains 80% of the variation as against 85% previously. There are five outliers which should be investigated. These are MBS item numbers 30058, 30421, 30485, 30493 and 32210.

Figure 5.4



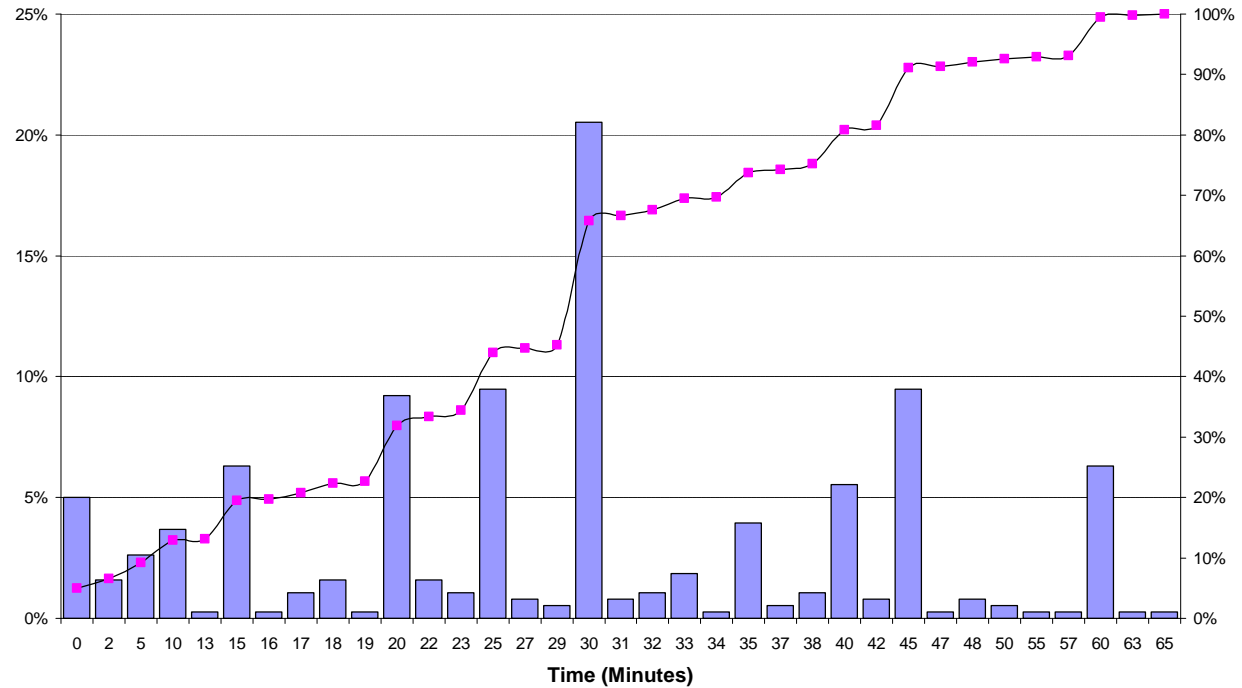
## Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Pre-Service Time

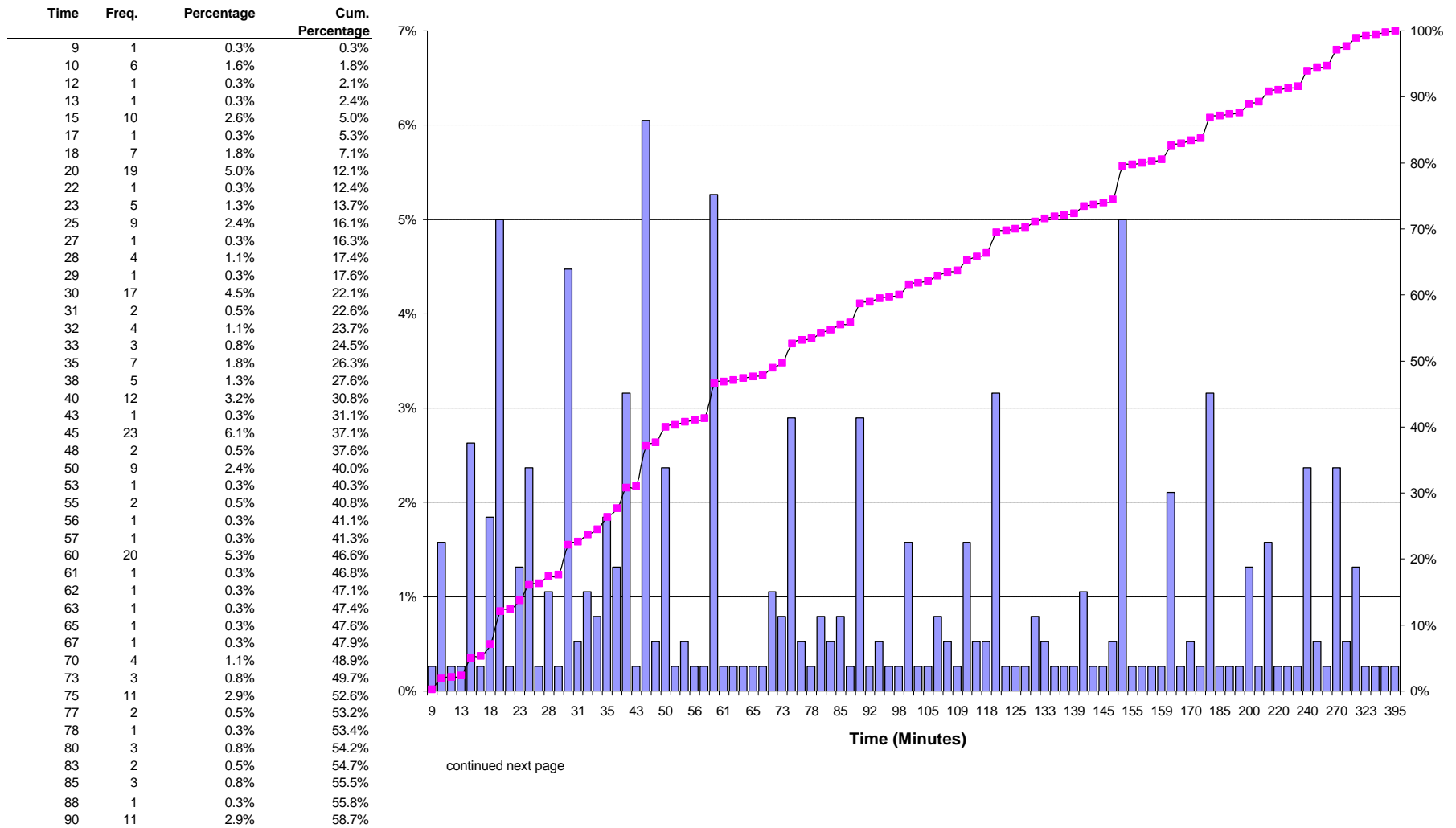
Time	Freq.	Percentage	Cum. Percentage
0	19	5.0%	5.0%
2	6	1.6%	6.6%
5	10	2.6%	9.2%
10	14	3.7%	12.9%
13	1	0.3%	13.2%
15	24	6.3%	19.5%
16	1	0.3%	19.7%
17	4	1.1%	20.8%
18	6	1.6%	22.4%
19	1	0.3%	22.6%
20	35	9.2%	31.8%
22	6	1.6%	33.4%
23	4	1.1%	34.5%
25	36	9.5%	43.9%
27	3	0.8%	44.7%
29	2	0.5%	45.3%
30	78	20.5%	65.8%
31	3	0.8%	66.6%
32	4	1.1%	67.6%
33	7	1.8%	69.5%
34	1	0.3%	69.7%
35	15	3.9%	73.7%
37	2	0.5%	74.2%
38	4	1.1%	75.3%
40	21	5.5%	80.8%
42	3	0.8%	81.6%
45	36	9.5%	91.1%
47	1	0.3%	91.3%
48	3	0.8%	92.1%
50	2	0.5%	92.6%
55	1	0.3%	92.9%
57	1	0.3%	93.2%
60	24	6.3%	99.5%
63	1	0.3%	99.7%
65	1	0.3%	100.0%
Total	380	100.0%	

Number of missing values = 0



Attachment 1 - Continued

Summary Report for Intra-Service Time



92	1	0.3%	58.9%
93	2	0.5%	59.5%
95	1	0.3%	59.7%
98	1	0.3%	60.0%
100	6	1.6%	61.6%
103	1	0.3%	61.8%
105	1	0.3%	62.1%
107	3	0.8%	62.9%
108	2	0.5%	63.4%
109	1	0.3%	63.7%
110	6	1.6%	65.3%
113	2	0.5%	65.8%
118	2	0.5%	66.3%
120	12	3.2%	69.5%
122	1	0.3%	69.7%
125	1	0.3%	70.0%
127	1	0.3%	70.3%
130	3	0.8%	71.1%
133	2	0.5%	71.6%
135	1	0.3%	71.8%
137	1	0.3%	72.1%
139	1	0.3%	72.4%
140	4	1.1%	73.4%
143	1	0.3%	73.7%
145	1	0.3%	73.9%
147	2	0.5%	74.5%
150	19	5.0%	79.5%
155	1	0.3%	79.7%
157	1	0.3%	80.0%
158	1	0.3%	80.3%
159	1	0.3%	80.5%
160	8	2.1%	82.6%
163	1	0.3%	82.9%
170	2	0.5%	83.4%
175	1	0.3%	83.7%
180	12	3.2%	86.8%
185	1	0.3%	87.1%
187	1	0.3%	87.4%
190	1	0.3%	87.6%
200	5	1.3%	88.9%
205	1	0.3%	89.2%
210	6	1.6%	90.8%
220	1	0.3%	91.1%
223	1	0.3%	91.3%
225	1	0.3%	91.6%
240	9	2.4%	93.9%
248	2	0.5%	94.5%
250	1	0.3%	94.7%
270	9	2.4%	97.1%
290	2	0.5%	97.6%
300	5	1.3%	98.9%
323	1	0.3%	99.2%
335	1	0.3%	99.5%
360	1	0.3%	99.7%
395	1	0.3%	100.0%

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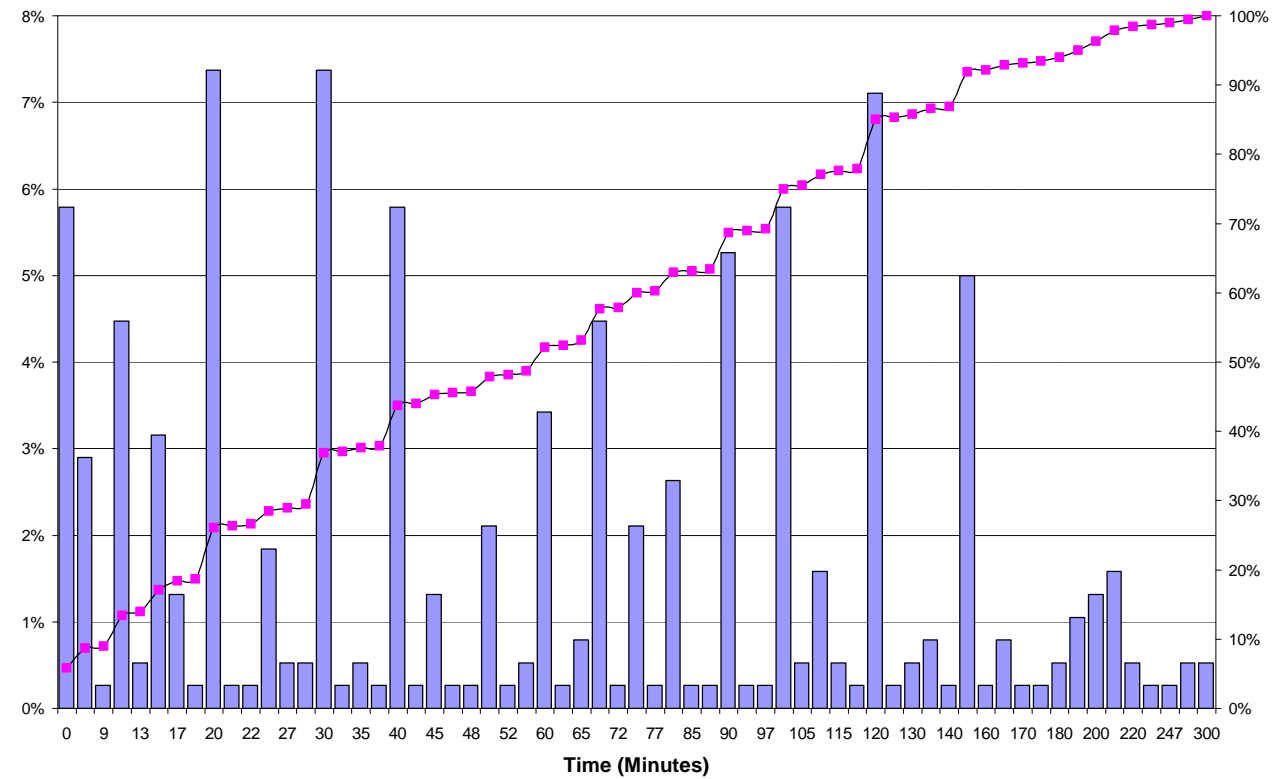
Total	380	100.0%
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Number of missing values = 0

Attachment 1 - Continued

Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	22	5.8%	5.8%
5	11	2.9%	8.7%
9	1	0.3%	8.9%
10	17	4.5%	13.4%
13	2	0.5%	13.9%
15	12	3.2%	17.1%
17	5	1.3%	18.4%
18	1	0.3%	18.7%
20	28	7.4%	26.1%
21	1	0.3%	26.3%
22	1	0.3%	26.6%
25	7	1.8%	28.4%
27	2	0.5%	28.9%
28	2	0.5%	29.5%
30	28	7.4%	36.8%
32	1	0.3%	37.1%
35	2	0.5%	37.6%
38	1	0.3%	37.9%
40	22	5.8%	43.7%
43	1	0.3%	43.9%
45	5	1.3%	45.3%
47	1	0.3%	45.5%
48	1	0.3%	45.8%
50	8	2.1%	47.9%
52	1	0.3%	48.2%
55	2	0.5%	48.7%
60	13	3.4%	52.1%
62	1	0.3%	52.4%
65	3	0.8%	53.2%
70	17	4.5%	57.6%
72	1	0.3%	57.9%
75	8	2.1%	60.0%
77	1	0.3%	60.3%
80	10	2.6%	62.9%
85	1	0.3%	63.2%
88	1	0.3%	63.4%
90	20	5.3%	68.7%
95	1	0.3%	68.9%
97	1	0.3%	69.2%
100	22	5.8%	75.0%
105	2	0.5%	75.5%
110	6	1.6%	77.1%
115	2	0.5%	77.6%
117	1	0.3%	77.9%
120	27	7.1%	85.0%
125	1	0.3%	85.3%



130	2	0.5%	85.8%
135	3	0.8%	86.6%
140	1	0.3%	86.8%
150	19	5.0%	91.8%
160	1	0.3%	92.1%
165	3	0.8%	92.9%
170	1	0.3%	93.2%
175	1	0.3%	93.4%
180	2	0.5%	93.9%
190	4	1.1%	95.0%
200	5	1.3%	96.3%
210	6	1.6%	97.9%
220	2	0.5%	98.4%
237	1	0.3%	98.7%
247	1	0.3%	98.9%
250	2	0.5%	99.5%
300	2	0.5%	100.0%
Total	380	100.0%	

continued next page

Number of missing values = 0

COMPARISON OF BREAST / COLORECTAL / GENERAL / HEAD AND NECK / LAPAROSCOPIC / UPPER GI SURGERY INTRA TIME ESTIMATES WITH OTHER ESTIMATES

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100x GENSUR /OTE
	ID	Type	Definition of Time *		GENSUR	OTE	
OST	H4	Priv	Knife to Skin -to- Dressing Applied	116	71.8	54.7	131.1
	H6	Priv	Knife to Skin -to- Drapes Removed	96	62.2	50.5	123.1
	H11	Priv	Pt Prepped -to- Drapes Removec	115	70.2	98.1	71.6
OPERATION TIME ** (OPT)	H1	Priv	Pt Positioned -to- Drapes Removed	85	59.5	44.8	132.9
	H8	Priv	Pt Positioned -to- Drapes Removed	142	75.9	62.4	121.8
	H10	Priv	Pt Positioned -to- Drapes Removed	64	58.2	43.1	135.1
	H13	Priv	Pt Positioned -to- Drapes Removed	80	59.9	45.9	130.5
	H15	Priv	Pt Positioned -to- Drapes Removed	129	77.5	50.4	153.7
	H16	Pub	Pt Positioned -to- Dressing Applied	184	78.0	68.5	114.0
	H17	Pub	Surgeon with Pt -to- Drapes Removed	205	90.8	72.8	124.8
	H18	Priv	Pt Positioned -to- Drapes Removed	182	80.0	57.1	140.1
	H19	Pub	Pt Positioned -to- Dressing Applied	139	82.5	61.8	133.4
	H20	Pub	Pt Positioned -to- Dressing Applied	155	74.7	59.0	126.7
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	96	70.1	65.1	107.8
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	172	75.5	66.6	113.4
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removec	96	63.3	54.4	116.3
OPERATION TIME 2 (OPT 2)	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	151	77.0	71.3	108.0
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	123	81.4	84.5	96.4
	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	58	39.1	30.9	126.6
	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	82	59.3	52.6	112.7
	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	130	78.1	56.6	137.9
	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	191	77.5	75.2	102.9
	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	211	91.3	81.2	112.5
	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	187	79.8	63.0	126.5
	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	177	85.7	72.2	118.7
	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	157	77.6	71.6	108.4
CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staff	173	75.5	72.1	104.7	
ANAESTHETIC TIME (OAT)	H1	Priv	Prep. Anaes. -to- Drapes Removed	94	58.0	57.4	101.1
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	124	72.6	85.5	84.8
	H6	Priv	Prep. Anaes. -to- Drapes Removed	102	61.3	61.0	100.5
	H8	Priv	Prep. Anaes. -to- Drapes Removed	159	75.8	79.7	95.2
	H10	Priv	Prep. Anaes. -to- Drapes Removed	68	58.6	59.7	98.2
	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	82	59.5	61.3	97.0
	H15	Priv	Induction of Anaes -to- Drapes Removed	131	77.5	64.1	120.9
	H16	Pub	Prep. Anaes. -to- Dressing Applied	192	77.4	84.8	91.3
	H17	Pub	Prep. Anaes. -to- Drapes Removed	211	91.1	97.6	93.4
	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	187	79.8	71.5	111.5
	H19	Pub	Prep. Anaes. -to- Dressing Applied	146	80.7	83.1	97.1
	H20	Pub	Prep. Anaes. -to- Dressing Applied	162	76.7	83.0	92.4
	CANS	Pub & Priv	Prep. Anaes. -to- Surg.Leaves Pt	174	75.2	73.6	102.2
Deloitte	Pub & Priv	Induction of Anaes. -to- Drapes Removec	96	63.3	64.5	98.2	
ANAESTHETIC TIME 2 (OAT 2)	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	341	99.2	123.6	80.3
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	123	78.9	86.4	91.4
	H7	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	49	38.5	30.5	126.2
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	161	76.3	86.3	88.4
	H9A	Priv	Prep. Anaes. -to- Trans. to Recovery Staff	129	81.8	97.7	83.7
	H9B	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	64	39.0	44.0	88.6
	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	118	69.7	118.5	58.8
	H12	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	48	60.9	70.9	85.9
	H14	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	257	91.6	105.4	86.9
	H15	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	133	78.9	71.5	110.3
	H16	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	193	77.0	91.3	84.4
	H17	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	213	89.9	104.5	86.0
	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	185	84.6	94.2	89.9
	H20	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	161	77.1	92.5	83.4
	CANS	Pub & Priv	Prep. Anaes. -to- Trans. to Recovery Staff	174	75.2	79.1	95.1
WAGroup	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	276	95.5	92.6	103.2	
TIME IN THEATRE (THT)	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	157	77.6	79.8	97.3
	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	33	46.3	42.8	108.2
	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	119	69.3	137.0	50.6
	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	84	59.0	68.5	86.1
	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	132	78.7	89.2	88.2
	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	188	79.6	78.0	102.1
	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	187	84.4	110.3	76.5
	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	112	38.4	30.7	125.3
	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	155	48.3	38.2	126.4
C'mix Othe	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staff	49	33.7	28.6	117.6	

\* Definition of Time  
- see Attachment A

\*\* Median ratio of GENSUR intra time estimates to OPT  
Unweighted = 126.7 %  
Weighted (for number of items in common) = 124.8 %



**Attachment A - THEATRE TIMES DEFINITIONS - STANDARDISED FROM HOSPITALS AND OTHER SOURCES**

PATHWAYS FOR SURGEON AND ANAESTHETIST			PT ENTERS OP SUITE	PT ENTERS ANAESTHETIC BAY OR OPERATING ROOM			START OF TIME						END OF TIME		XFER TO RECOV	XFER FROM RECOV
				Anaesth. arrives to talk to Pt	Anaesth. prepares Pt for anaes-cannula/ lines insertion	Anaes. Commence admin/ induction of anaes	Surg. with Pt after anaes induction	Pt is positioned	Pt is draped	Pt is prep'ed	Knife to skin	Wound Closure	Dressing Applied	Drapes Removed	Surgical Team leave Pt	
ID	TIME	TYPE														
Hosp4	H4OST	Priv														
Hosp6	H6OST	Priv														
Hosp11	H11OST	Priv														
Hosp1	H1OPT	Priv														
Hosp8	H8OPT	Priv														
Hosp10	H10OPT	Priv														
Hosp13	H13OPT	Priv														
Hosp15	H15OPT	Priv														
Hosp16	H16OPT	Pub														
Hosp17	H17OPT	Pub														
Hosp18	H18OPT	Priv														
Hosp19	H19OPT	Pub														
Hosp20	H20OPT	Pub														
APHA	APHAOPT	Priv														
CANS	CANSOPT	Pub & Priv														
Deloitte	DTOPT	Pub & Priv														
Hosp8	H8OPT2	Priv														
Hosp9A	H9AOPT2	Priv														
Hosp9B	H9BOPT2	Priv/Day														
Hosp13	H13OPT2	Priv														
Hosp15	H15OPT2	Priv														
Hosp16	H16OPT2	Pub														
Hosp17	H17OPT2	Pub														
Hosp18	H18OPT2	Priv														
Hosp19	H19OPT2	Pub														
Hosp20	H20OPT2	Pub														
CANS	CANSOPT2	Pub & Priv														
Hosp1	H1OAT	Priv														
Hosp4	H4OAT	Priv														
Hosp6	H6OAT	Priv														
Hosp8	H8OAT	Priv														
Hosp10	H10OAT	Priv														
Hosp13	H13OAT	Priv														
Hosp15	H15OAT	Pub														
Hosp16	H16OAT	Pub														
Hosp17	H17OAT	Priv														
Hosp18	H18OAT	Pub														
Hosp19	H19OAT	Pub														
Hosp20	H20OAT	Pub & Priv														
CAnS	CANSOAT	Pub & Priv														
Deloitte	DTOAT	Pub & Priv														
MBS	MBSOAT2	Pub & Priv														
Hosp5	H5OAT2	Priv														
Hosp7	H7OAT2	Priv/Day														
Hosp8	H8OAT2	Priv														
Hosp9A	H9AAT2	Priv														
Hosp9B	H9BOAT2	Priv/Day														
Hosp11	H11OAT2	Priv														
Hosp12	H12OAT2	Pub														
Hosp14	H14OAT2	Pub														
Hosp15	H15OAT2	Priv														
Hosp16	H16OAT2	Pub														
Hosp17	H17OAT2	Pub														
Hosp19	H19OAT2	Pub														
Hosp20	H20OAT2	Pub														
CANS	CANSOAT2	Pub & Priv														
WAGroup	WAOAT2	Priv														
Hosp2	H2THT	Priv														
Hosp3	H3THT	Pub														
Hosp11	H11THT	Pub														
Hosp13	H13THT	Priv														
Hosp15	H15THT	Priv														
Hosp18	H18THT	Priv														
Hosp19	H19THT	Day & Other														
Cmix -Pub	CMXPVHT	Priv														
Cmix -Pte	CMXPVHT	Priv														
Cmix -OTH	CMXPVHT	Priv														

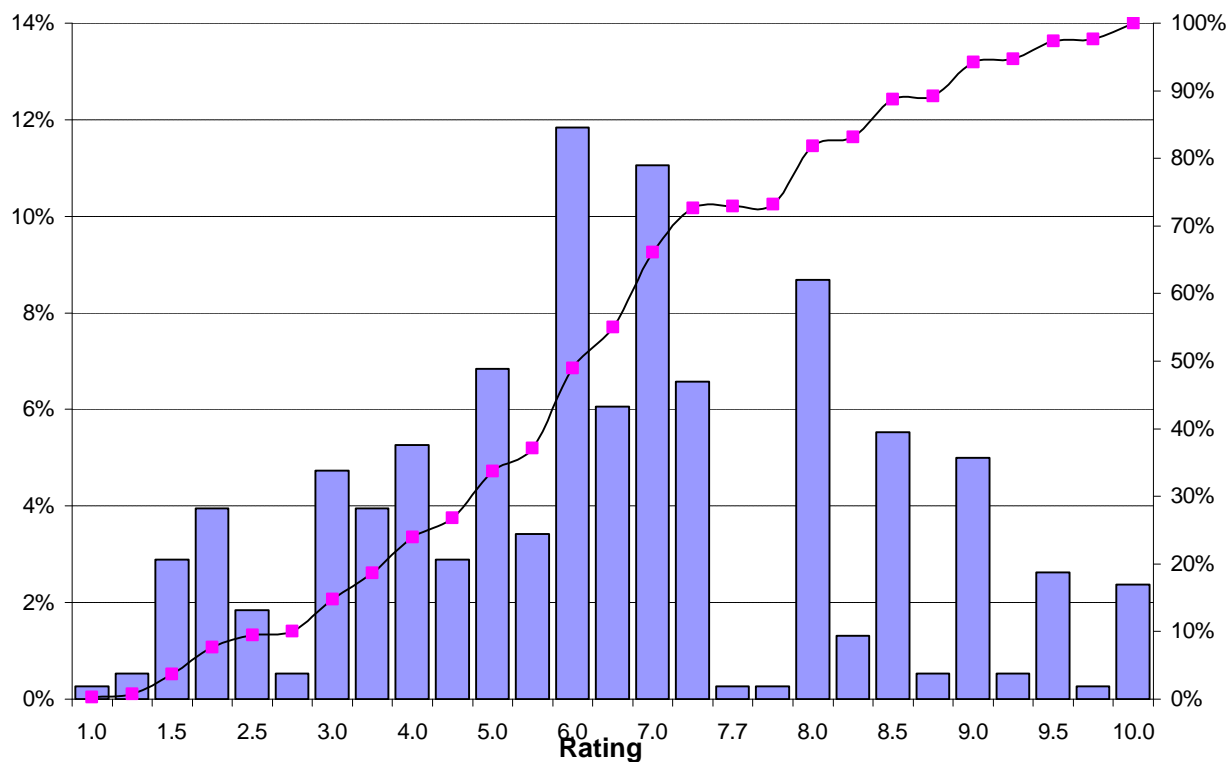
Key: = Hospitals where start/end times are defined by > 1 pathway time option

## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1.0	1	0.3%	0.3%
1.3	2	0.5%	0.8%
1.5	11	2.9%	3.7%
2.0	15	3.9%	7.6%
2.5	7	1.8%	9.5%
2.7	2	0.5%	10.0%
3.0	18	4.7%	14.7%
3.5	15	3.9%	18.7%
4.0	20	5.3%	23.9%
4.5	11	2.9%	26.8%
5.0	26	6.8%	33.7%
5.5	13	3.4%	37.1%
6.0	45	11.8%	48.9%
6.5	23	6.1%	55.0%
7.0	42	11.1%	66.1%
7.5	25	6.6%	72.6%
7.7	1	0.3%	72.9%
7.9	1	0.3%	73.2%
8.0	33	8.7%	81.8%
8.3	5	1.3%	83.2%
8.5	21	5.5%	88.7%
8.7	2	0.5%	89.2%
9.0	19	5.0%	94.2%
9.3	2	0.5%	94.7%
9.5	10	2.6%	97.4%
9.7	1	0.3%	97.6%
10.0	9	2.4%	100.0%
Total	380	100.0%	

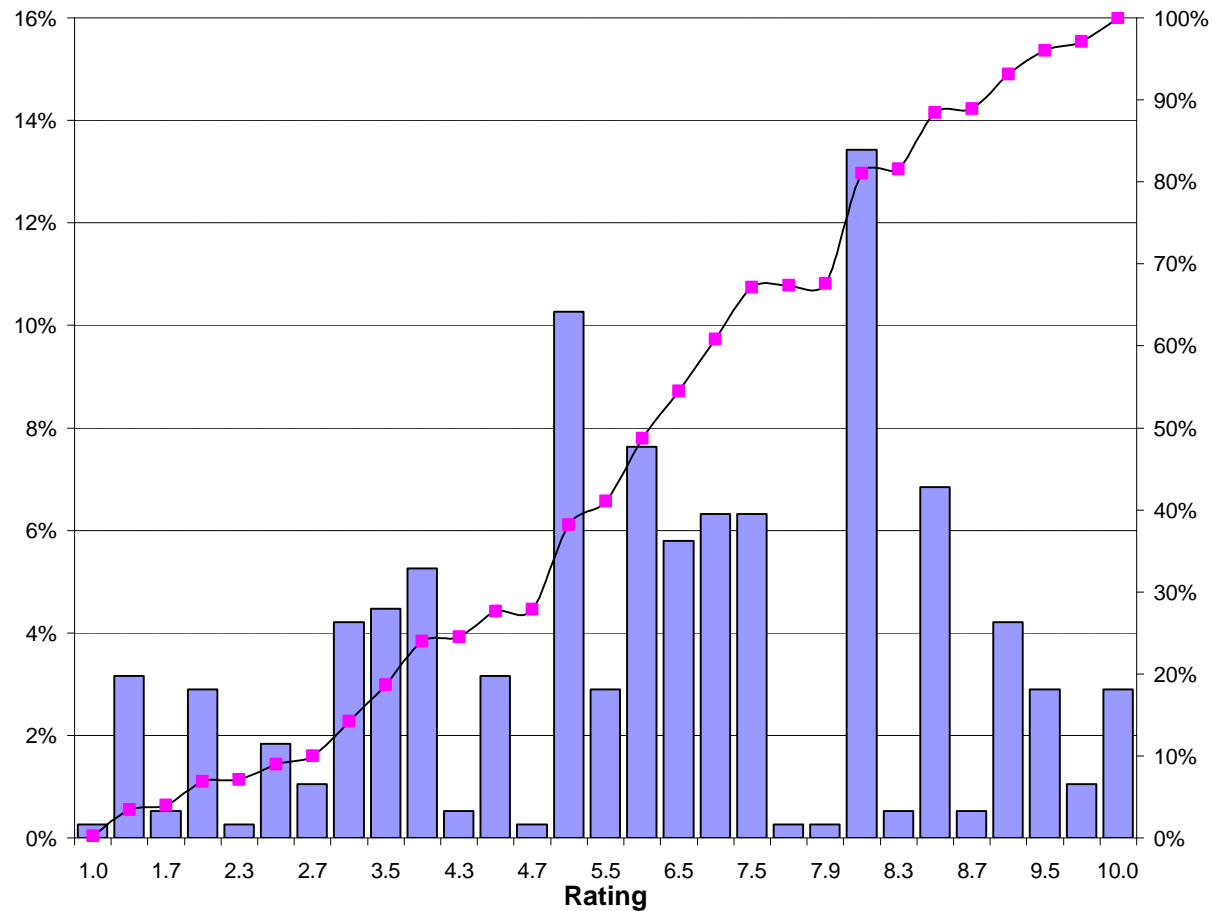


Number of missing values = 0

### Attachment 3 - Continued

#### Summary Report for Technical Skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1.0	1	0.3%	0.3%
1.5	12	3.2%	3.4%
1.7	2	0.5%	3.9%
2.0	11	2.9%	6.8%
2.3	1	0.3%	7.1%
2.5	7	1.8%	8.9%
2.7	4	1.1%	10.0%
3.0	16	4.2%	14.2%
3.5	17	4.5%	18.7%
4.0	20	5.3%	23.9%
4.3	2	0.5%	24.5%
4.5	12	3.2%	27.6%
4.7	1	0.3%	27.9%
5.0	39	10.3%	38.2%
5.5	11	2.9%	41.1%
6.0	29	7.6%	48.7%
6.5	22	5.8%	54.5%
7.0	24	6.3%	60.8%
7.5	24	6.3%	67.1%
7.7	1	0.3%	67.4%
7.9	1	0.3%	67.6%
8.0	51	13.4%	81.1%
8.3	2	0.5%	81.6%
8.5	26	6.8%	88.4%
8.7	2	0.5%	88.9%
9.0	16	4.2%	93.2%
9.5	11	2.9%	96.1%
9.7	4	1.1%	97.1%
10.0	11	2.9%	100.0%
<b>Total</b>	<b>380</b>	<b>100.0%</b>	



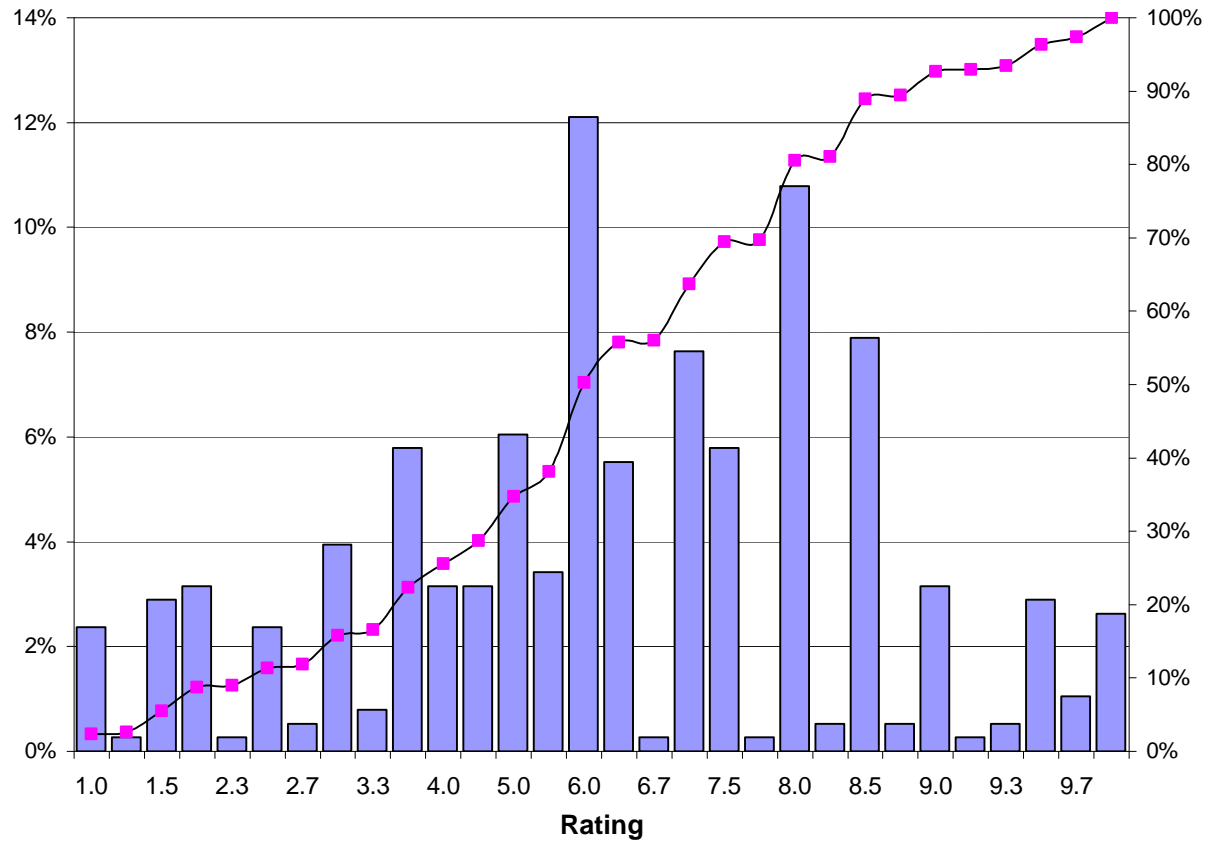
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### Attachment 3 - Continued

#### Summary Report for Stress.

Rating	Freq.	Percentage	Cum. Percentage
1.0	9	2.4%	2.4%
1.3	1	0.3%	2.6%
1.5	11	2.9%	5.5%
2.0	12	3.2%	8.7%
2.3	1	0.3%	8.9%
2.5	9	2.4%	11.3%
2.7	2	0.5%	11.8%
3.0	15	3.9%	15.8%
3.3	3	0.8%	16.6%
3.5	22	5.8%	22.4%
4.0	12	3.2%	25.5%
4.5	12	3.2%	28.7%
5.0	23	6.1%	34.7%
5.5	13	3.4%	38.2%
6.0	46	12.1%	50.3%
6.5	21	5.5%	55.8%
6.7	1	0.3%	56.1%
7.0	29	7.6%	63.7%
7.5	22	5.8%	69.5%
7.7	1	0.3%	69.7%
8.0	41	10.8%	80.5%
8.3	2	0.5%	81.1%
8.5	30	7.9%	88.9%
8.7	2	0.5%	89.5%
9.0	12	3.2%	92.6%
9.2	1	0.3%	92.9%
9.3	2	0.5%	93.4%
9.5	11	2.9%	96.3%
9.7	4	1.1%	97.4%
10.0	10	2.6%	100.0%
<b>Total</b>	<b>380</b>	<b>100.0%</b>	

Number of missing values = 0



## Attachment 4 - Links with Other Specialties

The number of link items between General Surgery and the other Consensus Groups is set out below.

**Number of Links with Other Specialties**

<b>Specialty</b>	<b>Procedure Items</b>	<b>Consultation Items</b>	<b>Total Items</b>
Gen. Prac. & Emergency Med.	14	0	14
Oral and Maxillo-facial Surgery	8	16	24
Obstetrics / Gynaecology	1	5	6
Cardio Thoracic Surgery	3	5	8
Neurosurgery	1	22	23
Orthopaedic surgery	3	22	25
Paediatric Surgery	5	14	19
Plastic Surgery	26	0	26
Urology	7	22	29
Vascular Surgery	4	7	11
Ophthalmology	0	17	17
ENT	4	3	7
Anaesthesia	0	22	22
Dermatology	19	14	33
Paediatric / Thoracic Medicine	0	22	22
General Medicine	2	22	24
Cardiology, Renal, ICU	1	21	22
Radiation, Oncology	0	22	22
Gastroenterology	20	22	42
Neurology	0	22	22
Haematology, Medical Oncology	0	22	22
Psychiatry	0	22	22
<b>Total</b>	<b>87</b>	<b>22</b>	<b>109</b>

## Glossary

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Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: a) being a good map b) having as high a frequency as possible c) being well spread in terms of their rank.
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.

**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**Cardio Thoracic Surgery  
Summary Status Report**

**December 1999**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

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This document outlines the results of an examination of the information sent to the NCCH by the Cardio Thoracic Surgery Consensus Group.

The Cardio Thoracic Surgery Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 123 items. These comprised 118 procedure items and 5 consultation items.

Analysis of this information showed:

- The median ratio of Cardio Thoracic Surgery's intra time estimates to NCCH's Theatre Times Database observed procedure times was 109.5%.
- The procedure items were given very much higher ranks than the consultation items ( $p < 0.001$ ).
- The ranks given to link items were significantly lower than those given to non-link items ( $p < 0.01$ ).
- The ranks given to the good map items were not significantly different from those given to the poor/no map items.
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 11.0.
- Given this comparatively large range in relative rates of pay it could be difficult to align Cardio Thoracic Surgery's rankings and ratings with those of the other groups.
- The consultation items were given imputed relative values<sup>1</sup> that were significantly lower than those given to the procedure items.
- The link items were given lower imputed relative values than the non-link items but the difference was not significant.
- There was no significant difference between the imputed relative values given to the good map items and those given to the poor/no map items.
- The correlation between the imputed relative values for Cardio Thoracic Surgery and schedule fee was reasonable ( $R^2 = 82\%$ ).
- The correlation between the imputed relative values for Cardio Thoracic Surgery and CPT RV was also reasonable ( $R^2 = 78\%$ ). There seems to be a simple proportional relationship between IRV and CPT RV.

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for Cardio Thoracic Surgery are set out in Table 2.1 together with associated standard deviations and ranges.

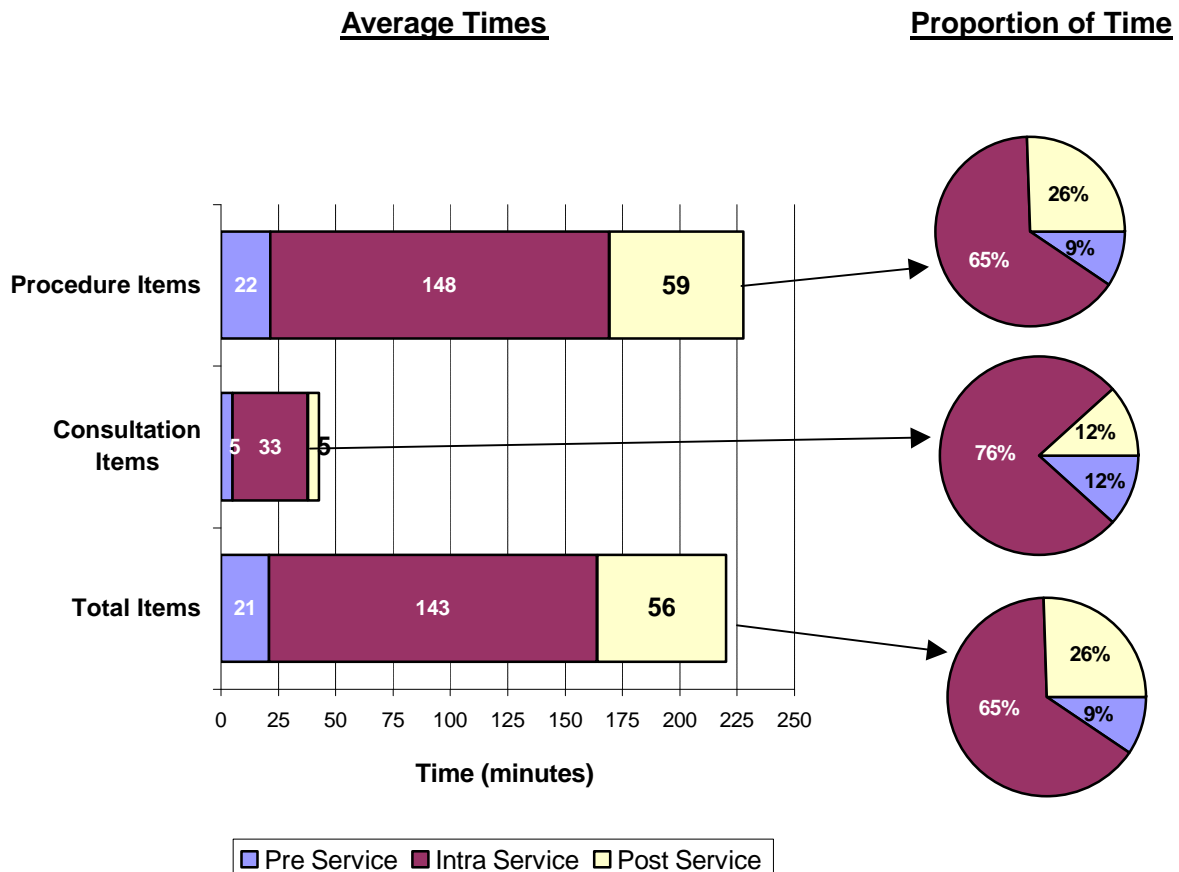
The mean intra service time was 143 minutes and the mean total time was 220 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
<b>Mean</b>	21	143	56	220
<b>SD</b>	10	91	37	132
<b>Min</b>	0	15	0	15
<b>Max</b>	30	432	138	590

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for procedure items, consultation items and all items.

**Figure 2.1**



Pre Service Intra Service Post Service

A summary breakdown is also provided in Table 2.2.

**Table 2.2**

Average Times	Pre Service	Intra Service	Post Service	Total Time
<b>Procedure Items</b>	21.5	147.9	58.5	227.9
<b>Consultation Items</b>	5.0	33.0	5.0	43.0
<b>Total Items</b>	20.9	143.2	56.3	220.4

Cardio Thoracic Surgery's intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies.

The median ratio of Cardio Thoracic Surgery's intra time estimates to the observed procedure times was 109.5%. A more detailed analysis is provided in Attachment 2.

## Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for Cardio Thoracic Surgery are set out in Table 3.1 together with associated standard deviations and ranges.

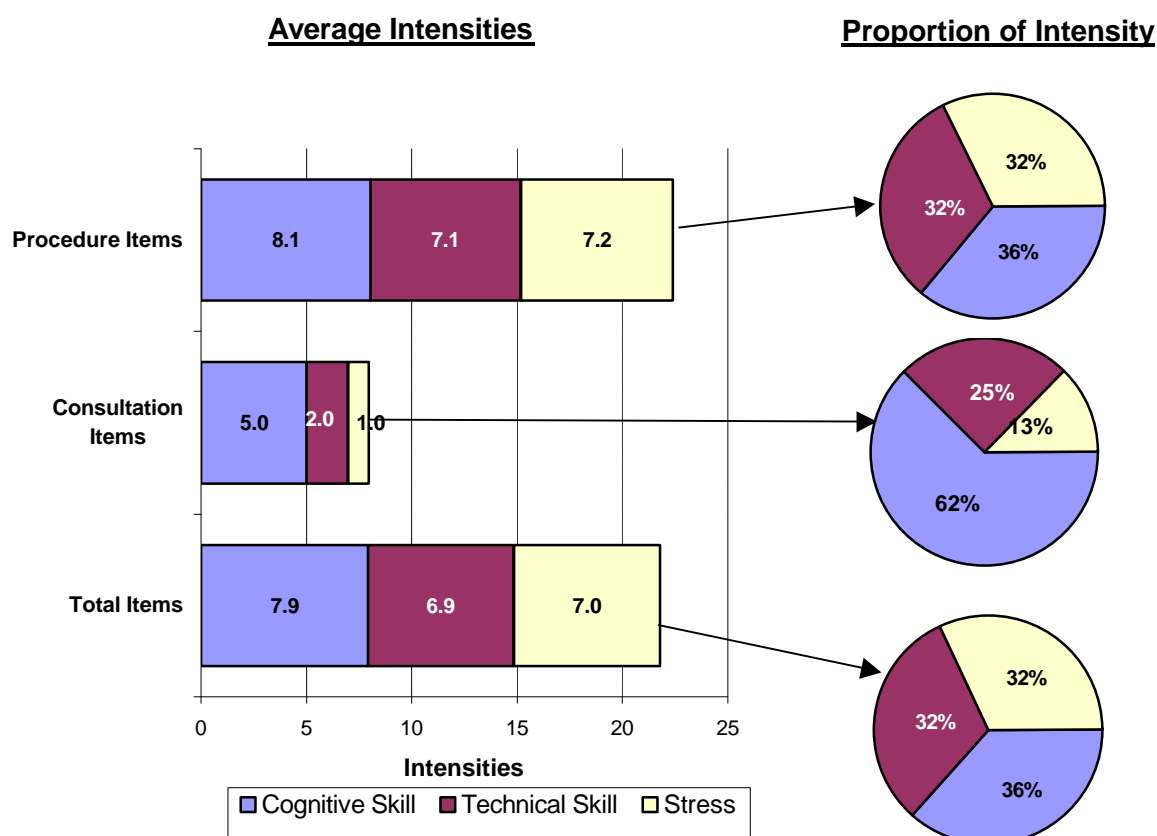
The mean ratings were 7.9 for cognitive skill, 6.9 for technical skill and 7.0 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
<b>Mean</b>	7.9	6.9	7.0	21.8
<b>SD</b>	2.2	2.6	2.7	7.4
<b>Min</b>	1.0	1.0	1.0	3.0
<b>Max</b>	10.0	10.0	10.0	30.0

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. They are provided for procedure items, consultation items and all items.

**Figure 3.1**



A summary breakdown is also provided in Table 3.2.

**Table 3.2**

<b>Intensity Ratings</b>	<b>Cognitive Skill</b>	<b>Technical Skill</b>	<b>Stress</b>	<b>Total Intensity</b>
<b>Procedure Items</b>	8.1	7.1	7.2	22.4
<b>Consultation Items</b>	5.0	2.0	1.0	8.0
<b>Total Items</b>	7.9	6.9	7.0	21.8

## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (i.e. time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4.1. The procedure items were given very much higher ranks than the consultation items (sum of ranks test,  $p < 0.001$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Procedure	118	1	122	59.7
Consultation	5	111	123	115.4
<b>Total</b>	123	1	123	62.0

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. The Cardio Thoracic Surgery Consensus Group assessed 18 link items. These comprised 13 of the 118 procedure items and all of their consultation items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.2. The ranks given to link items were significantly lower than those given to non-link items (sum of ranks test,  $p < 0.01$ ).

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Procedure - Link	13	14	118	57.9
Consultation - Link	5	111	123	115.4
<b>Total Link</b>	18	14	123	73.9
<b>Total Non-link (Procedure)</b>	105	1	122	60.0
<b>Total</b>	123	1	123	62.0

Good maps of Cardio Thoracic Surgery's items to CPT were available for 33 of their 123 items. A breakdown of the ranks given to these good map items and to the poor/no map items is set out in Table 4.3. The ranks given to the good map items were not significantly different from those given to the poor/no map items. This implies that good map items (i.e. potential core items) are well spread throughout the ranks.

**Table 4.3**

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
<b>Good Map</b>	33	4	121	61.2
<b>Poor/No Map</b>	90	1	123	62.3
<b>Total</b>	123	1	123	62.0

## Section 5 Relative Value Implications

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For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analyzed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for Cardio Thoracic Surgery is 1 to 96.

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the range in relative rates of pay is 1 to 10.0. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the range in relative rates of pay is 1 to 11.0

These ranges in relative rates of pay are much higher than the median observed for specialties examined so far<sup>3</sup>. The range is not the result of isolated extreme values and is therefore robust. In terms of deviations in rates of pay, it could be difficult to align Cardio Thoracic Surgery's rankings and ratings with those of the other groups

<sup>3</sup> The median range in relative rates of pay depending on intensity alone is 1 to 3.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.5.



Comparisons between consultation and procedure items, between link items and non link items and between good map Items and poor/no map Items in terms of imputed relative value (IRV) are set out in Table 5.1.

The consultation items were given imputed relative values that were significantly lower than those given to the procedure items (t tests,  $p < 0.01$ ). The link items were given lower imputed relative values than the non-link items but the difference was not significant. There was no significant difference between the imputed relative values given to good map items and those given to poor/no map items.

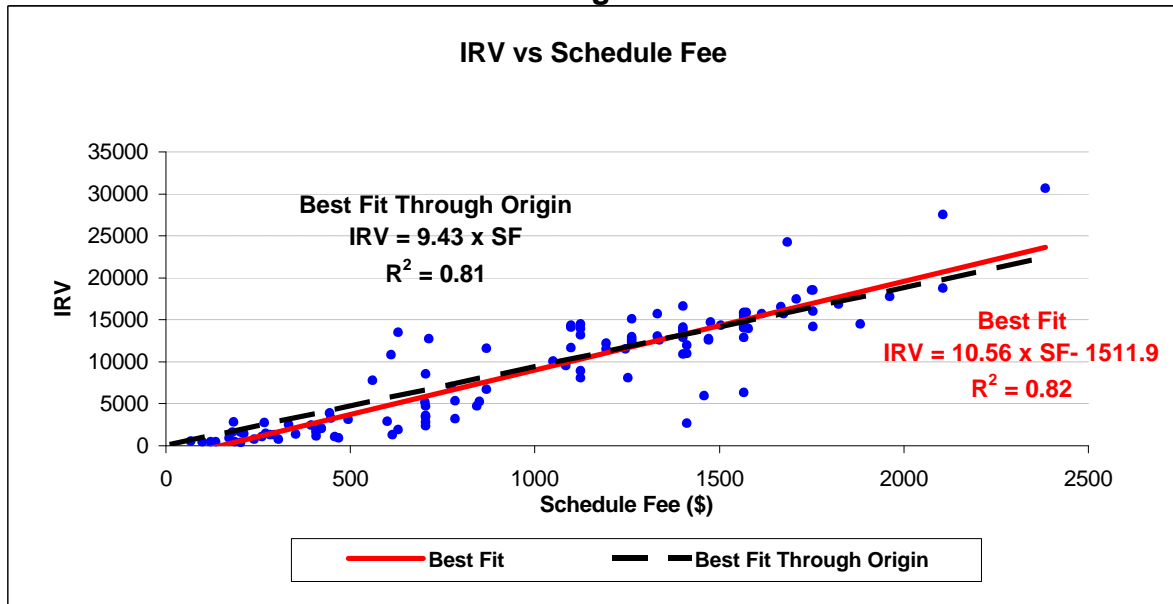
**Table 5.1**

Type of Item	Number Reviewed	IRVs			
		Mean $\pm$	SD	Low	High
<b>Consultation</b>	5	608 $\pm$	201	320	800
<b>Procedure</b>	118	9374 $\pm$	6592	387	30660
<b>Link</b>	18	7310 $\pm$	6243	320	15859
<b>Non-link</b>	105	9310 $\pm$	6743	387	30660
<b>Good Map</b>	33	8964 $\pm$	6226	435	18744
<b>Poor/No Map</b>	90	9037 $\pm$	6880	320	30660
<b>Total</b>	123	9017 $\pm$	6685	320	30660

A plot of Cardio Thoracic Surgery's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is reasonable ( $R^2 = 0.82$ )<sup>4</sup>. There are a number of outliers which should be investigated. These comprise MBS item numbers 38559, 38562, 38565, 38572, 38624, 38647 and 38703.

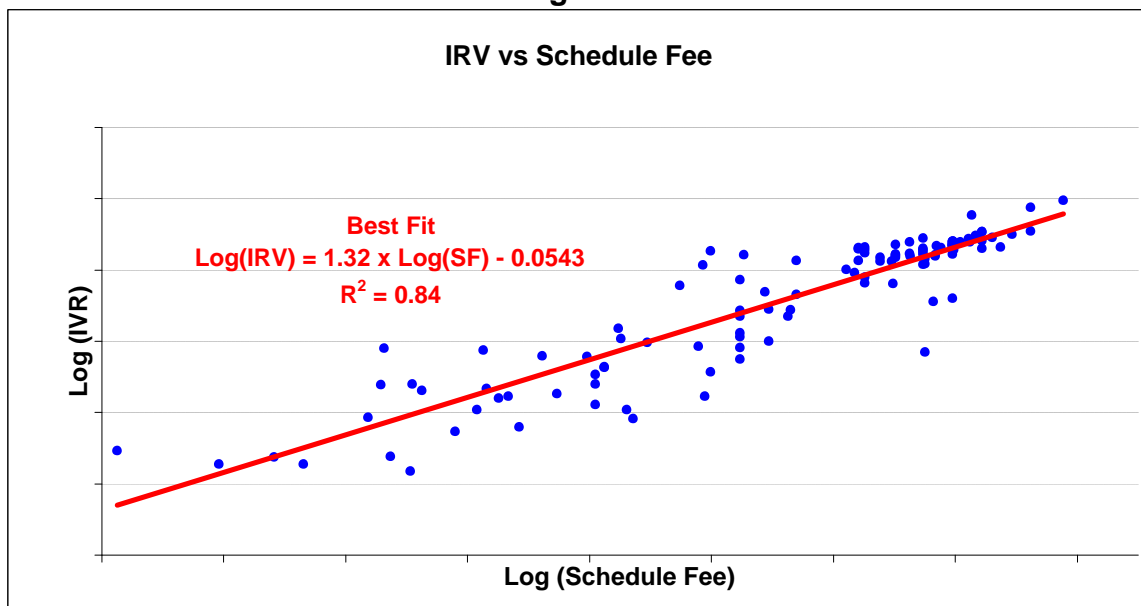
<sup>4</sup> An  $R^2$  value of 0.82 means that the line explains 82% of the variation.

Figure 5.1



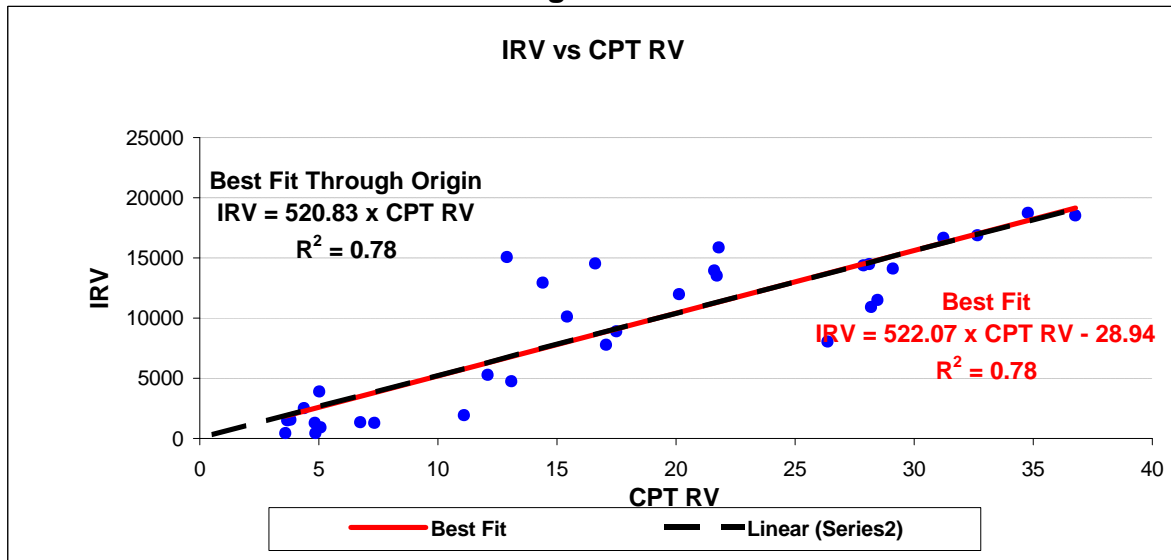
We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit explains 84% of the variation as against 82% above. There is one outlier, MBS Item 38703, which was mentioned previously.

Figure 5.2



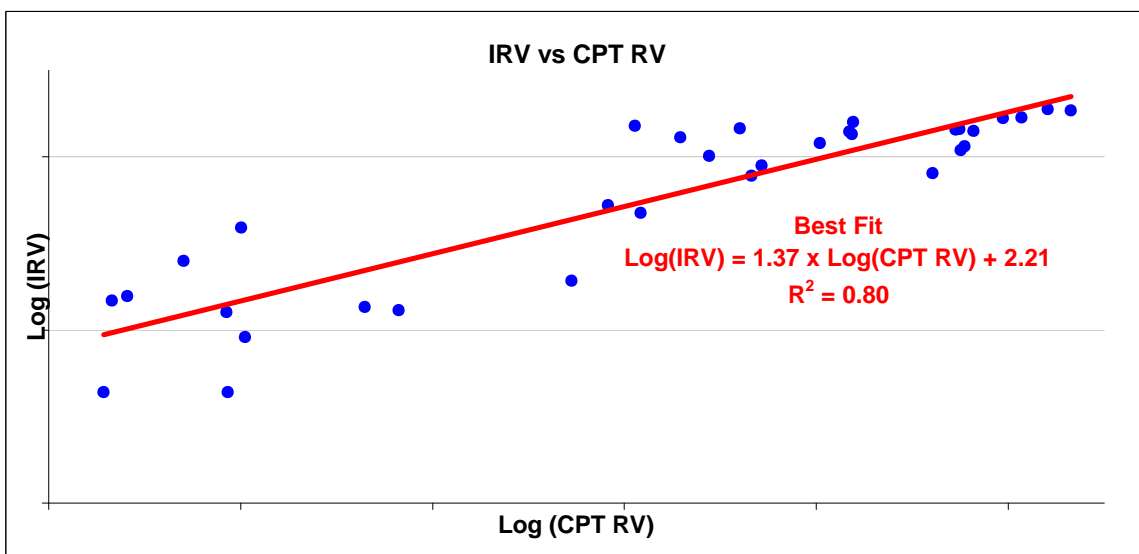
A plot of Cardio Thoracic Surgery's IRVs against CPT RV is set out in Figure 5.3. The fit is reasonable ( $R^2 = 0.78$ ) and the results are consistent with a simple proportional relationship between the scales. There is one outlier, MBS Item 38453, which should be investigated.

Figure 5.3



A log/log plot is also provided (Figure 5.4). The fit explains 80% of the variation as against 78% previously. There are three outliers which may need to be investigated. They are MBS item numbers 30096 and 41901 in addition to 38453 which was mentioned previously.

Figure 5.4



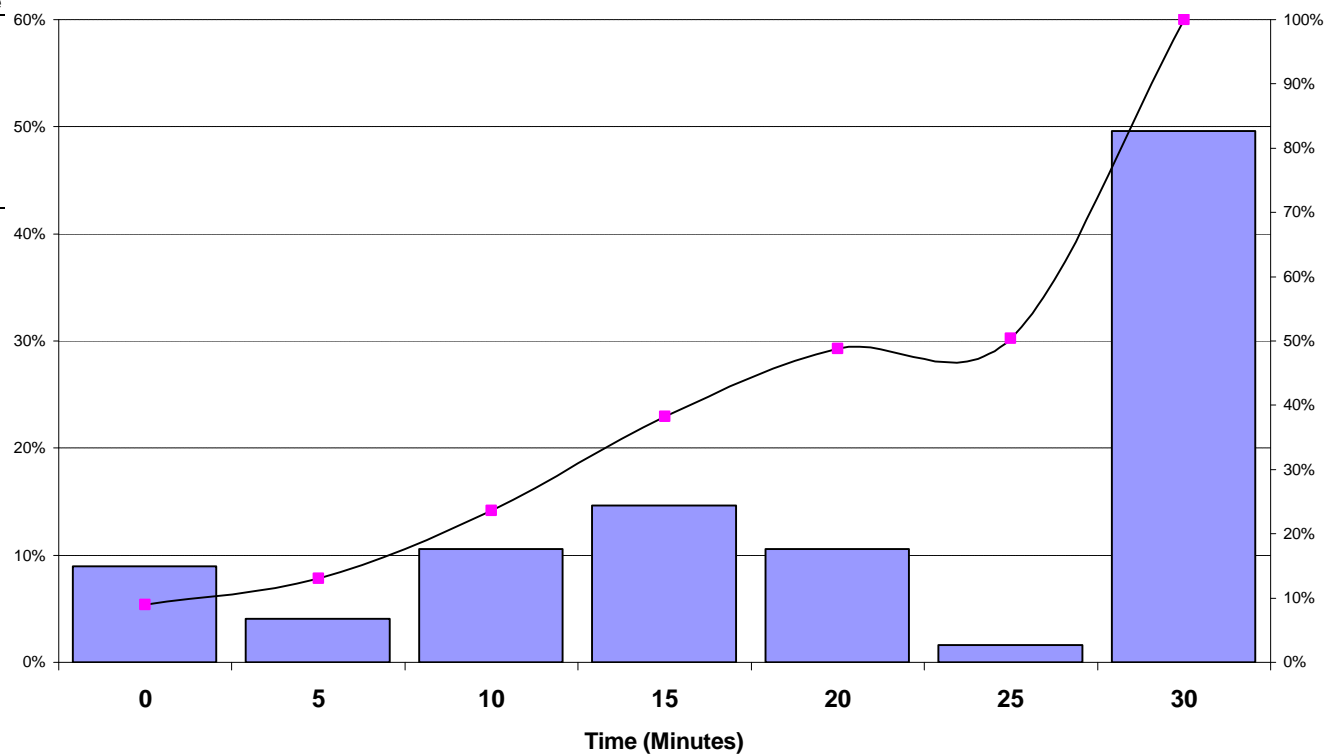
## Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Pre-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	11	8.9%	8.9%
5	5	4.1%	13.0%
10	13	10.6%	23.6%
15	18	14.6%	38.2%
20	13	10.6%	48.8%
25	2	1.6%	50.4%
30	61	49.6%	100.0%
Total	123	100.0%	

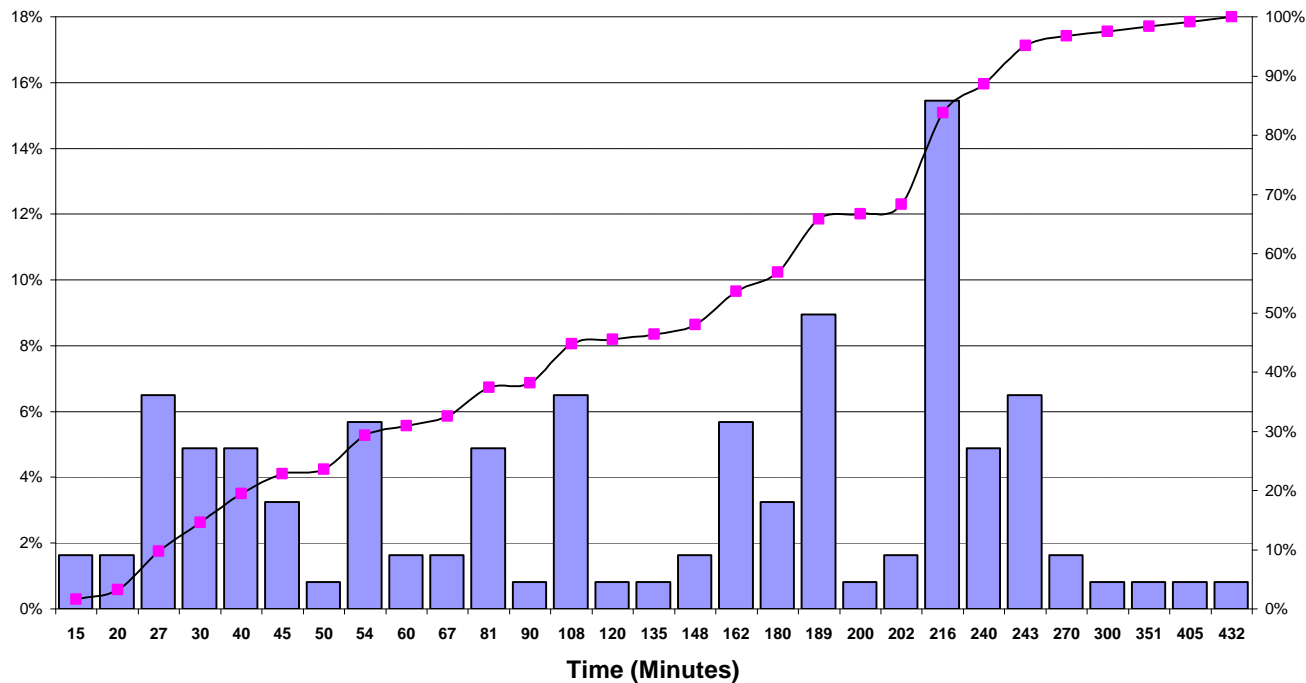
Number of missing values = 0



## Attachment 1 - Continued

### Summary Report for Intra-Service Time

Time	Freq.	Percentage	Cum. Percentage
15	2	1.6%	1.6%
20	2	1.6%	3.3%
27	8	6.5%	9.8%
30	6	4.9%	14.6%
40	6	4.9%	19.5%
45	4	3.3%	22.8%
50	1	0.8%	23.6%
54	7	5.7%	29.3%
60	2	1.6%	30.9%
67	2	1.6%	32.5%
81	6	4.9%	37.4%
90	1	0.8%	38.2%
108	8	6.5%	44.7%
120	1	0.8%	45.5%
135	1	0.8%	46.3%
148	2	1.6%	48.0%
162	7	5.7%	53.7%
180	4	3.3%	56.9%
189	11	8.9%	65.9%
200	1	0.8%	66.7%
202	2	1.6%	68.3%
216	19	15.4%	83.7%
240	6	4.9%	88.6%
243	8	6.5%	95.1%
270	2	1.6%	96.7%
300	1	0.8%	97.6%
351	1	0.8%	98.4%
405	1	0.8%	99.2%
432	1	0.8%	100.0%
<b>Total</b>	<b>123</b>	<b>100.0%</b>	

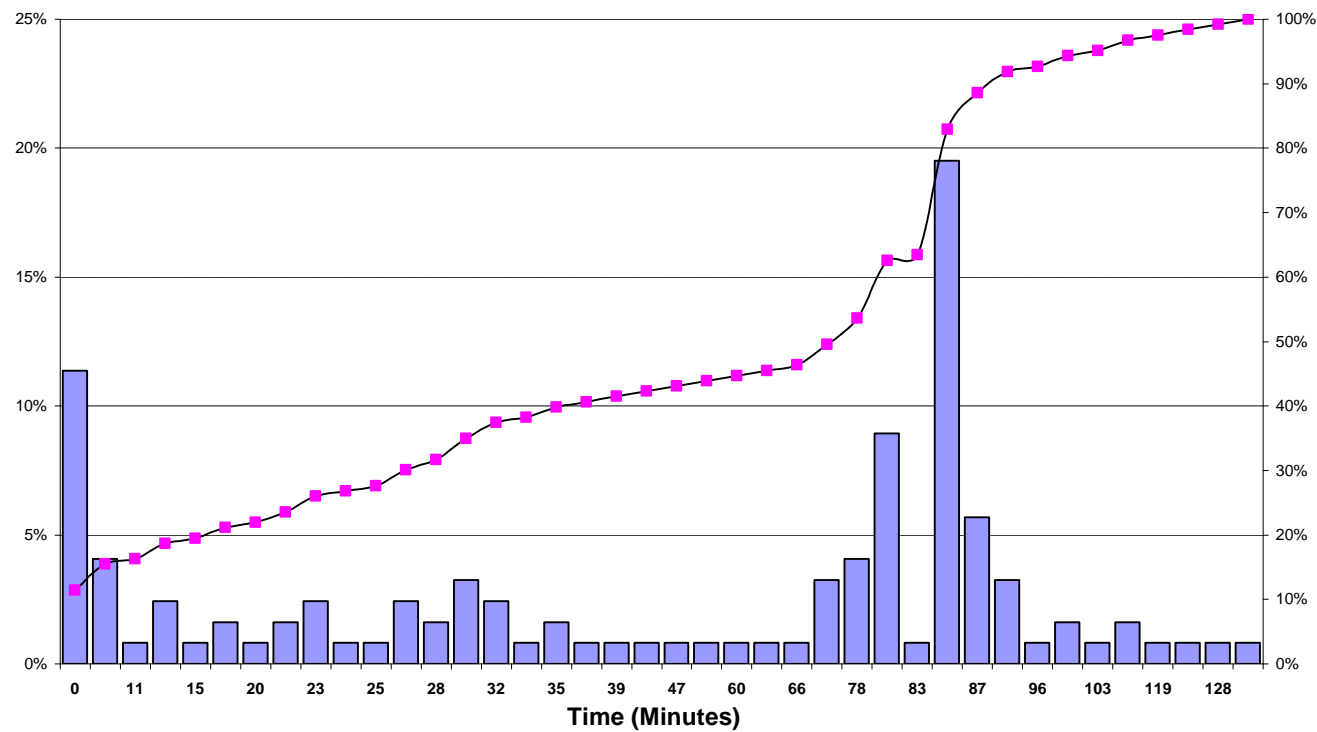


Number of missing values = 0

## Attachment 1 - Continued

### Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	14	11.4%	11.4%
5	5	4.1%	15.4%
11	1	0.8%	16.3%
13	3	2.4%	18.7%
15	1	0.8%	19.5%
18	2	1.6%	21.1%
20	1	0.8%	22.0%
21	2	1.6%	23.6%
23	3	2.4%	26.0%
24	1	0.8%	26.8%
25	1	0.8%	27.6%
26	3	2.4%	30.1%
28	2	1.6%	31.7%
29	4	3.3%	35.0%
32	3	2.4%	37.4%
33	1	0.8%	38.2%
35	2	1.6%	39.8%
36	1	0.8%	40.7%
39	1	0.8%	41.5%
42	1	0.8%	42.3%
47	1	0.8%	43.1%
57	1	0.8%	43.9%
60	1	0.8%	44.7%
63	1	0.8%	45.5%
66	1	0.8%	46.3%
72	4	3.3%	49.6%
78	5	4.1%	53.7%
81	11	8.9%	62.6%
83	1	0.8%	63.4%
84	24	19.5%	82.9%
87	7	5.7%	88.6%
90	4	3.3%	91.9%
96	1	0.8%	92.7%
102	2	1.6%	94.3%
103	1	0.8%	95.1%
107	2	1.6%	96.7%
119	1	0.8%	97.6%
125	1	0.8%	98.4%
128	1	0.8%	99.2%
138	1	0.8%	100.0%
<b>Total</b>	<b>123</b>	<b>100.0%</b>	



Number of missing values = 0

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x CARD/OTE
	ID	Type	Definition of Time *		CARD	OTE	
OST	H4	Priv	Knife to Skin -to- Dressing Applied	4	67.5	39.7	170.0
	H6	Priv	Knife to Skin -to- Drapes Removed	1	27.0	35.0	77.1
	H11	Priv	Pt Prepped -to- Drapes Removec	0			
OPERATION TIME ** (OPT)	H1	Priv	Pt Positioned -to- Drapes Removed	1	27.0	16.4	164.8
	H8	Priv	Pt Positioned -to- Drapes Removed	3	45.0	41.0	109.8
	H10	Priv	Pt Positioned -to- Drapes Removed	14	127.0	94.2	134.8
	H13	Priv	Pt Positioned -to- Drapes Removed	0			
	H15	Priv	Pt Positioned -to- Drapes Removed	27	110.7	86.3	128.3
	H16	Pub	Pt Positioned -to- Dressing Applied	9	88.9	71.9	123.7
	H17	Pub	Surgeon with Pt -to- Drapes Removed	42	164.1	181.7	90.3
	H18	Priv	Pt Positioned -to- Drapes Removed	5	84.6	88.9	95.1
	H19	Pub	Pt Positioned -to- Dressing Applied	32	132.3	119.9	110.4
	H20	Pub	Pt Positioned -to- Dressing Applied	22	134.1	129.9	103.2
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	8	69.1	62.0	111.6
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	33	143.2	130.8	109.5
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removec	6	159.2	127.7	124.7
OPERATION TIME 2 (OPT 2)	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	4	78.8	145.5	54.1
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	32	144.8	113.8	127.2
	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	1	27.0	15.5	174.4
	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	0			
	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	28	108.6	94.5	115.0
	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	9	88.9	81.0	109.8
	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	43	165.3	206.7	80.0
	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	6	77.2	93.3	82.7
	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	39	142.2	137.9	103.1
	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	23	129.4	137.3	94.3
CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staff	34	140.6	139.8	100.6	
ANAESTHETIC TIME (OAT)	H1	Priv	Prep. Anaes. -to- Drapes Removed	1	27.0	21.4	125.9
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	4	67.5	71.7	94.2
	H6	Priv	Prep. Anaes. -to- Drapes Removed	1	27.0	45.0	60.0
	H8	Priv	Prep. Anaes. -to- Drapes Removed	4	78.8	165.3	47.7
	H10	Priv	Prep. Anaes. -to- Drapes Removed	16	129.7	124.7	104.0
	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	0			
	H15	Priv	Induction of Anaes -to- Drapes Removed	30	106.3	110.0	96.7
	H16	Pub	Prep. Anaes. -to- Dressing Applied	9	88.9	92.0	96.6
	H17	Pub	Prep. Anaes. -to- Drapes Removed	44	162.7	244.9	66.5
	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	6	77.2	114.0	67.7
	H19	Pub	Prep. Anaes. -to- Dressing Applied	34	128.9	156.4	82.4
	H20	Pub	Prep. Anaes. -to- Dressing Applied	23	129.4	168.9	76.6
	CANS	Pub & Priv	Prep. Anaes. -to- Surg.Leaves Pt	33	143.2	148.4	96.5
Deloitte	Pub & Priv	Induction of Anaes. -to- Drapes Removec	7	148.0	142.9	103.6	
ANAESTHETIC TIME 2 (OAT 2)	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	104	159.3	189.7	84.0
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	20	120.6	159.1	75.8
	H7	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	1	27.0	17.1	157.5
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	4	78.8	174.5	45.1
	H9A	Priv	Prep. Anaes. -to- Trans. to Recovery Staff	32	144.8	131.8	109.9
	H9B	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	1	27.0	25.2	107.1
	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	1	27.0	25.0	108.0
	H12	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	2	101.0	120.0	84.2
	H14	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	60	148.6	182.7	81.3
	H15	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	30	106.3	115.8	91.8
	H16	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	9	88.9	101.2	87.9
	H17	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	44	162.7	260.7	62.4
	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	41	140.9	171.8	82.0
	H20	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	23	129.4	181.4	71.3
	CANS	Pub & Priv	Prep. Anaes. -to- Trans. to Recovery Staff	34	140.6	156.9	89.6
	WAGroup	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	29	107.0	130.3	82.1
TIME IN THEATRE (THT)	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	33	120.3	89.3	134.7
	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	0			
	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	1	27.0	39.0	69.2
	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	0			
	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	29	107.2	140.8	76.1
	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	6	77.2	119.8	64.4
	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	41	136.6	190.4	71.8
	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	4	37.0	24.9	148.8
	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	12	47.2	35.5	132.9
C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staff	1	27.0	20.3	133.1	

\* Definition of Time  
- see Attachment A

\*\* Median ratio of CARD intra time estimates to OPT  
Unweighted = 111.0 %  
Weighted (for number of items in common) = 109.5 %

**THEATRE TIMES DEFINITIONS - STANDARDISED FROM HOSPITALS AND OTHER SOURCES**

PATHWAYS FOR SURGEON AND ANAESTHETIST			PT ENTERS OP SUITE	PT ENTERS ANAESTHETIC BAY OR OPERATING ROOM			START OF TIME						END OF TIME		XFER TO RECOV	XFER FROM RECOV
				Anaesth. arrives to talk to Pt	Anaesth. prepares Pt for anaes-cannula/ lines insertion	Anaes. Commence admin/ induction of anaes	Surg. with Pt after anaes induction	Pt is positioned	Pt is draped	Pt is prep'ed	Knife to skin	Wound Closure	Dressing Applied	Drapes Removed	Surgical Team leave Pt	
ID	TIME	TYPE														
Hosp4	H4OST	Priv														
Hosp6	H6OST	Priv														
Hosp11	H11OST	Priv														
Hosp1	H10OPT	Priv														
Hosp8	H8OPT	Priv														
Hosp10	H10OPT	Priv														
Hosp13	H13OPT	Priv														
Hosp15	H15OPT	Priv														
Hosp16	H16OPT	Pub														
Hosp17	H17OPT	Pub														
Hosp18	H18OPT	Priv														
Hosp19	H19OPT	Pub														
Hosp20	H20OPT	Pub														
APHA	APHAOPT	Priv														
CANS	CANSOPT	Pub & Priv														
Deloitte	DTOPT	Pub & Priv														
Hosp8	H8OPT2	Priv														
Hosp9A	H9AOPT2	Priv														
Hosp9B	H9BOPT2	Priv/Day														
Hosp13	H13OPT2	Priv														
Hosp15	H15OPT2	Priv														
Hosp16	H16OPT2	Pub														
Hosp17	H17OPT2	Pub														
Hosp18	H18OPT2	Priv														
Hosp19	H19OPT2	Pub														
Hosp20	H20OPT2	Pub														
CANS	CANSOPT2	Pub & Priv														
Hosp1	H1OAT	Priv														
Hosp4	H4OAT	Priv														
Hosp6	H6OAT	Priv														
Hosp8	H8OAT	Priv														
Hosp10	H10OAT	Priv														
Hosp13	H13OAT	Priv														
Hosp15	H15OAT	Pub														
Hosp16	H16OAT	Pub														
Hosp17	H17OAT	Priv														
Hosp18	H18OAT	Pub														
Hosp19	H19OAT	Pub														
Hosp20	H20OAT	Pub & Priv														
CAnS	CANSOAT	Pub & Priv														
Deloitte	DTOAT	Pub & Priv														
MBS	MBSOAT2	Pub & Priv														
Hosp5	H5OAT2	Priv														
Hosp7	H7OAT2	Priv/Day														
Hosp8	H8OAT2	Priv														
Hosp9A	H9AOAT2	Priv														
Hosp9B	H9BOAT2	Priv/Day														
Hosp11	H11OAT2	Priv														
Hosp12	H12OAT2	Pub														
Hosp14	H14OAT2	Pub														
Hosp15	H15OAT2	Priv														
Hosp16	H16OAT2	Pub														
Hosp17	H17OAT2	Pub														
Hosp19	H19OAT2	Pub														
Hosp20	H20OAT2	Pub														
CANS	CANSOAT2	Pub & Priv														
WAGroup	WAOAT2	Priv														
Hosp2	H2THT	Priv														
Hosp3	H3THT	Pub														
Hosp11	H11THT	Pub														
Hosp13	H13THT	Priv														
Hosp15	H15THT	Priv														
Hosp18	H18THT	Priv														
Hosp19	H19THT	Day & Other														
C'mix -Pub	CMXPVTHT	Priv														
C'mix -Pte	CMXPVTHT	Priv														
C'mix-oth	CMXOTHT	Priv														

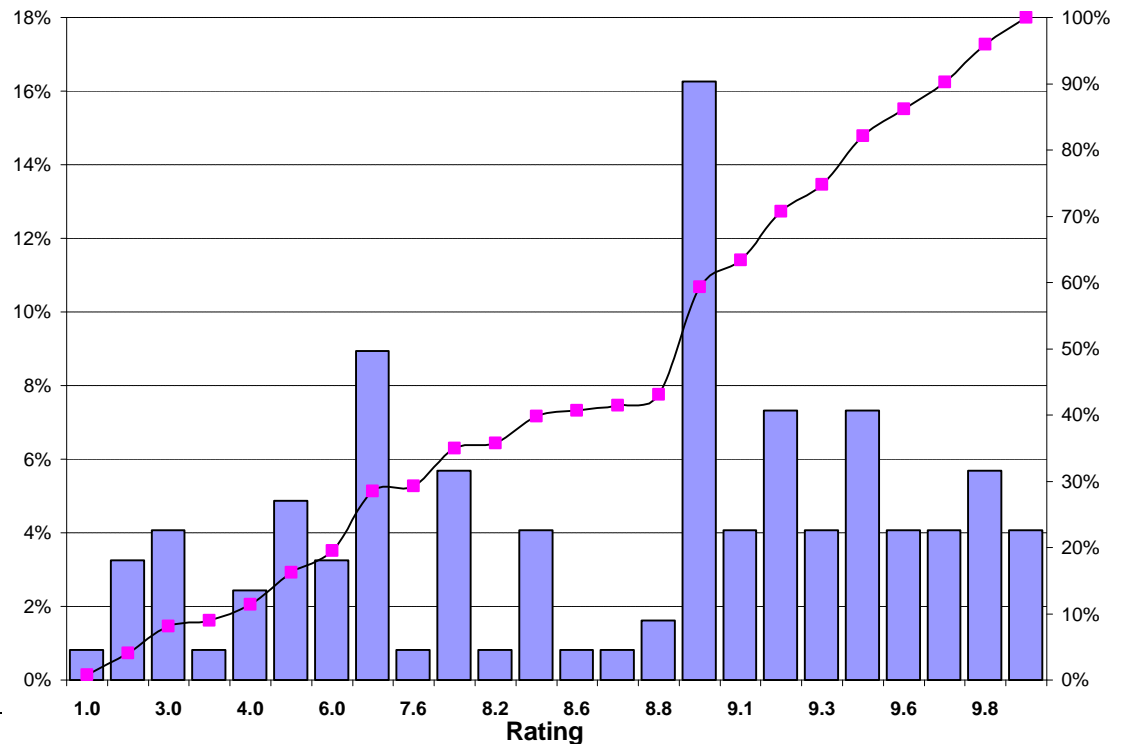


## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1.0	1	0.8%	0.8%
2.0	4	3.3%	4.1%
3.0	5	4.1%	8.1%
3.5	1	0.8%	8.9%
4.0	3	2.4%	11.4%
5.0	6	4.9%	16.3%
6.0	4	3.3%	19.5%
7.0	11	8.9%	28.5%
7.6	1	0.8%	29.3%
8.0	7	5.7%	35.0%
8.2	1	0.8%	35.8%
8.5	5	4.1%	39.8%
8.6	1	0.8%	40.7%
8.7	1	0.8%	41.5%
8.8	2	1.6%	43.1%
9.0	20	16.3%	59.3%
9.1	5	4.1%	63.4%
9.2	9	7.3%	70.7%
9.3	5	4.1%	74.8%
9.5	9	7.3%	82.1%
9.6	5	4.1%	86.2%
9.7	5	4.1%	90.2%
9.8	7	5.7%	95.9%
10.0	5	4.1%	100.0%
<b>Total</b>	<b>123</b>	<b>100.0%</b>	

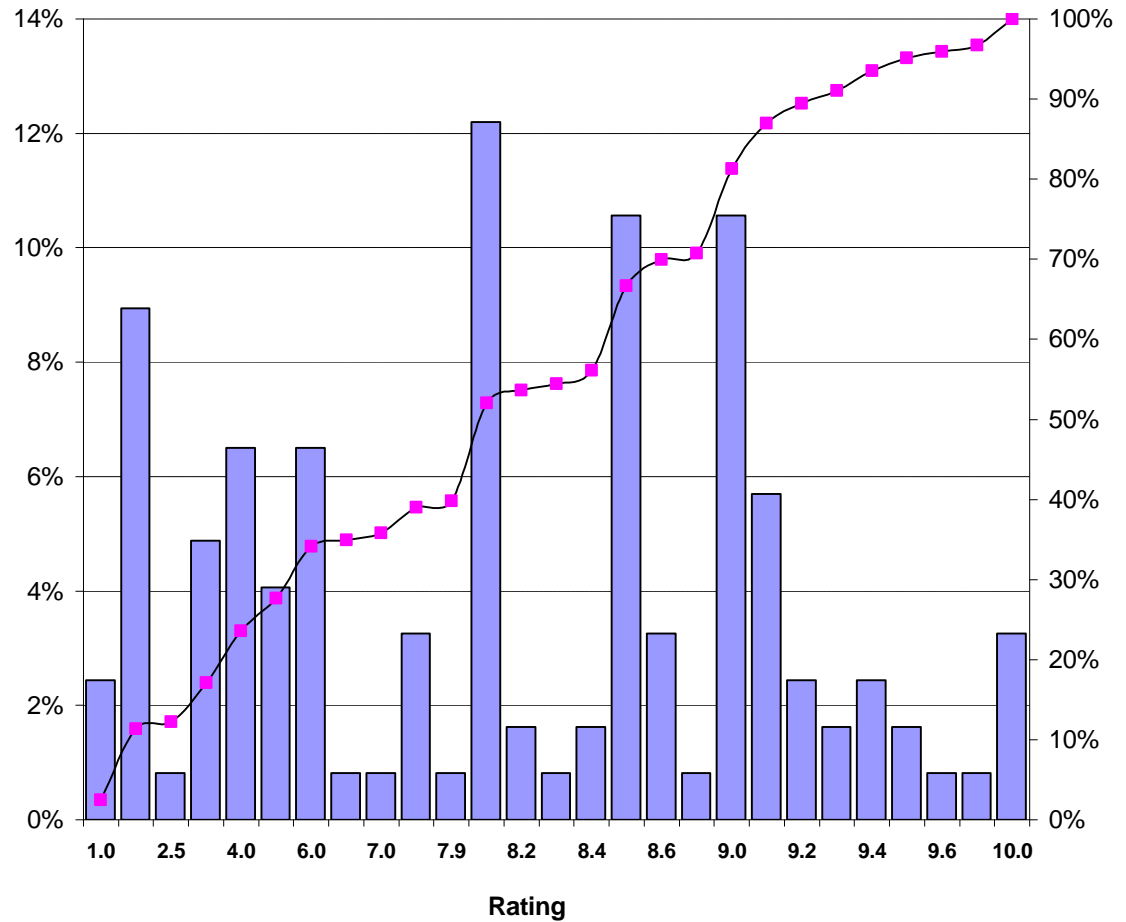


Number of missing values = 0

### Attachment 3 - Continued

#### Summary Report for Technical skill etc.

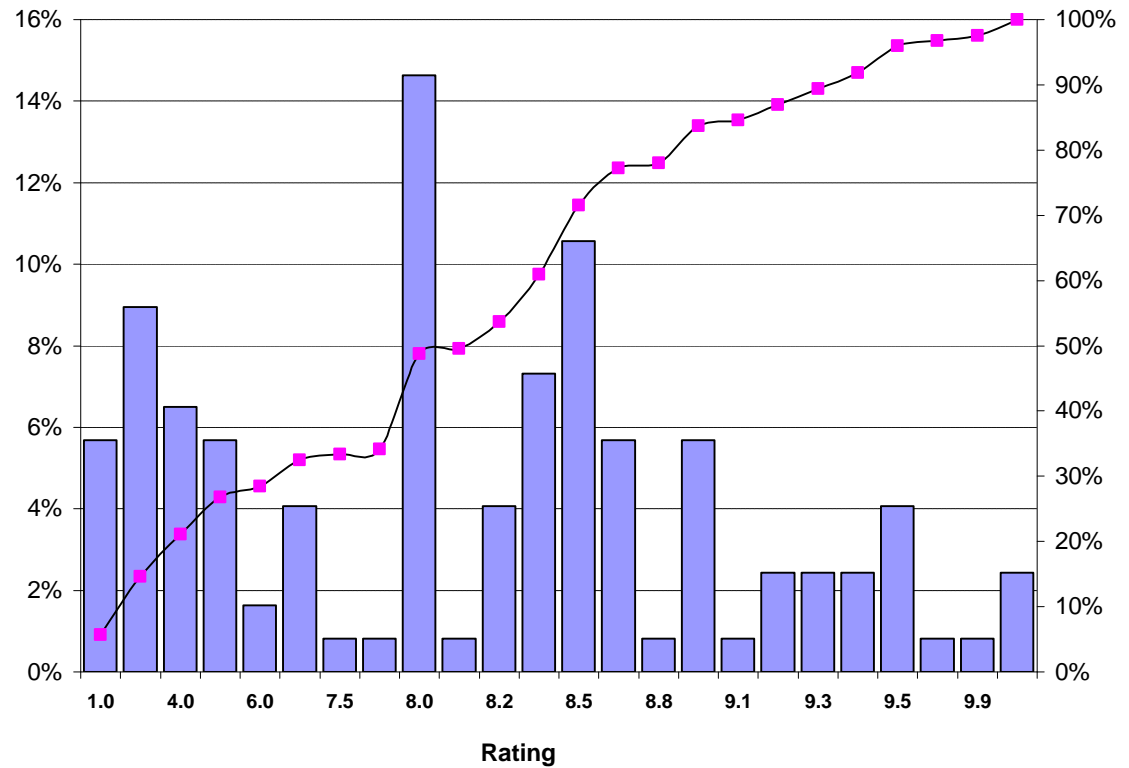
Rating	Freq.	Percentage	Cum. Percentage
1.0	3	2.4%	2.4%
2.0	11	8.9%	11.4%
2.5	1	0.8%	12.2%
3.0	6	4.9%	17.1%
4.0	8	6.5%	23.6%
5.0	5	4.1%	27.6%
6.0	8	6.5%	34.1%
6.5	1	0.8%	35.0%
7.0	1	0.8%	35.8%
7.5	4	3.3%	39.0%
7.9	1	0.8%	39.8%
8.0	15	12.2%	52.0%
8.2	2	1.6%	53.7%
8.3	1	0.8%	54.5%
8.4	2	1.6%	56.1%
8.5	13	10.6%	66.7%
8.6	4	3.3%	69.9%
8.8	1	0.8%	70.7%
9.0	13	10.6%	81.3%
9.1	7	5.7%	87.0%
9.2	3	2.4%	89.4%
9.3	2	1.6%	91.1%
9.4	3	2.4%	93.5%
9.5	2	1.6%	95.1%
9.6	1	0.8%	95.9%
9.9	1	0.8%	96.7%
10.0	4	3.3%	100.0%
<b>Total</b>	<b>123</b>	<b>100.0%</b>	



### Attachment 3 - Continued

#### Summary Report for Stress

Rating	Freq.	Percentage	Cum. Percentage
1.0	7	5.7%	5.7%
2.0	11	8.9%	14.6%
4.0	8	6.5%	21.1%
5.0	7	5.7%	26.8%
6.0	2	1.6%	28.5%
7.0	5	4.1%	32.5%
7.5	1	0.8%	33.3%
7.6	1	0.8%	34.1%
8.0	18	14.6%	48.8%
8.1	1	0.8%	49.6%
8.2	5	4.1%	53.7%
8.3	9	7.3%	61.0%
8.5	13	10.6%	71.5%
8.6	7	5.7%	77.2%
8.8	1	0.8%	78.0%
9.0	7	5.7%	83.7%
9.1	1	0.8%	84.6%
9.2	3	2.4%	87.0%
9.3	3	2.4%	89.4%
9.4	3	2.4%	91.9%
9.5	5	4.1%	95.9%
9.6	1	0.8%	96.7%
9.9	1	0.8%	97.6%
10.0	3	2.4%	100.0%
Total	123	100.0%	



Number of missing values = 0

**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**Neurosurgery  
Summary Status Report**

**October 12, 1999**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

---

This document outlines the results of an examination of the information sent to the NCCH by the Neurosurgery Consensus Group.

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 171 items. These comprised 143 procedure items and 28 consultation items.

Analysis of this information showed:

- The median ratio of Neurosurgery's intra time estimates to NCCH's Theatre Times Database observed procedure times was 101.7%. This suggests little or no bias in the Group's intra time estimates.
- The Group gave very much higher ranks to procedure items than to consultation items and very much lower ranks to link items than to non-link items ( $p < 0.001$ ),
- There was no significant bias in the ranking of potential core items,
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 6.7. This is higher than the median observed for specialties so far examined. However, in terms of deviations in rates of pay, it should still be possible to align Neurosurgery's rankings and ratings with those of the other groups.
- Procedure items were given very much greater imputed relative values<sup>1</sup> than consultation items ( $p < 0.001$ ).
- Link items were given very much lower imputed relative values than non-link items ( $p < 0.001$ ) while good map items were shown to have significantly lower imputed relative values when log transformed data were tested ( $p < 0.05$ ).
- The correlation between the imputed relative values for Neurosurgery and the Medicare Benefits Schedule Fee was reasonable ( $R^2 = 81\%$ ). However between the Group's imputed relative values and CPT RV, it was poor ( $R^2 = 56\%$ ).

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for Neurosurgery are set out in Table 2.1 together with associated standard deviations and ranges.

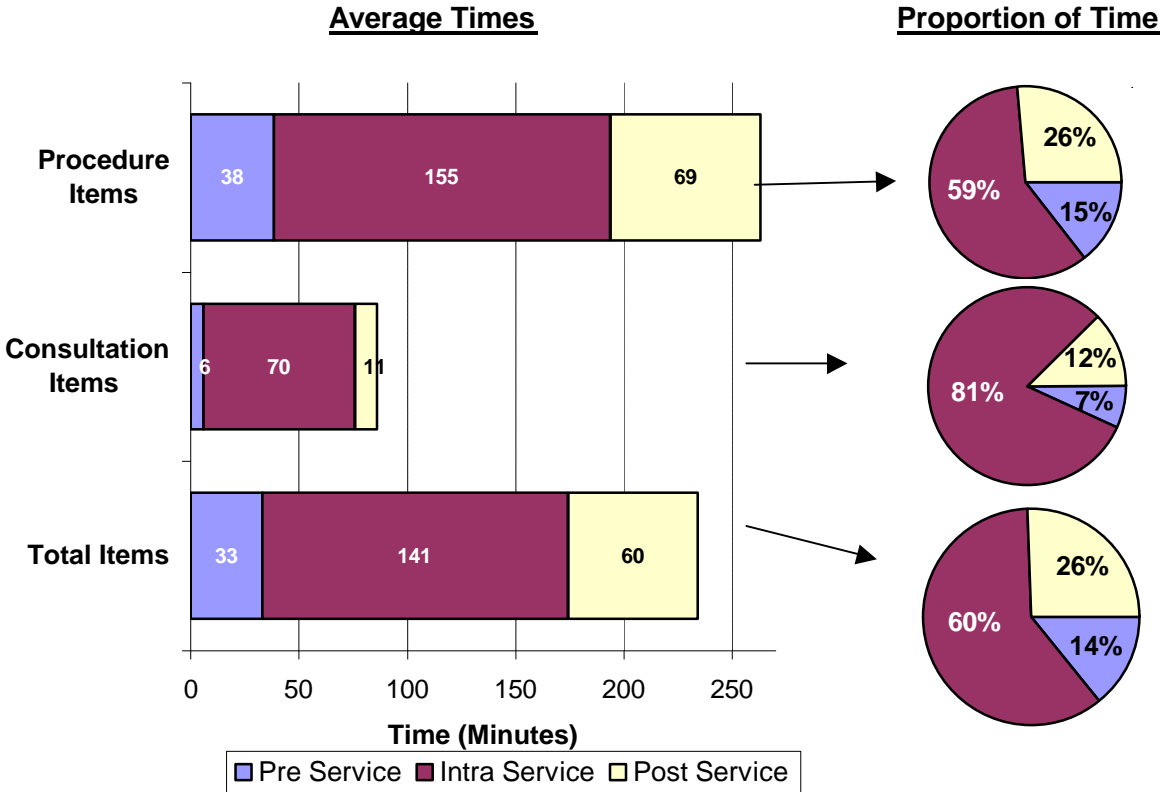
The mean intra service time was 141 minutes and the mean total time was 234 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
<b>Mean</b>	33	141	60	234
<b>SD</b>	22	116	41	166
<b>Min</b>	0	5	0	5
<b>Max</b>	90	570	150	750

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for procedure items, consultation items and all items.

**Figure 2.1**



A summary breakdown is also provided in Table 2.2.

**Table 2.2**

<b>Average Times</b>	<b>Pre Service</b>	<b>Intra Service</b>	<b>Post Service</b>	<b>Total Time</b>
<b>Procedure Items</b>	38.3	155.4	69.4	263.1
<b>Consultation Items</b>	6.0	69.8	10.5	86.3
<b>Total Items</b>	33.0	141.4	59.7	234.1

Neurosurgery's procedure intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies. The median ratio of Neurosurgery's intra time estimates to the observed procedure times was 101.7%. This suggests little or no bias in the group's intra time estimates. However the median estimate, in this case, is not particularly robust. Details are provided in Attachment 2.

Neurosurgery's consultation intra time estimates appear high in comparison to those of other groups. This is very largely due to the inclusion of prolonged attendance items (MBS Item numbers 160 to 164).



## Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for Neurosurgery are set out in Table 3.1 together with associated standard deviations and ranges.

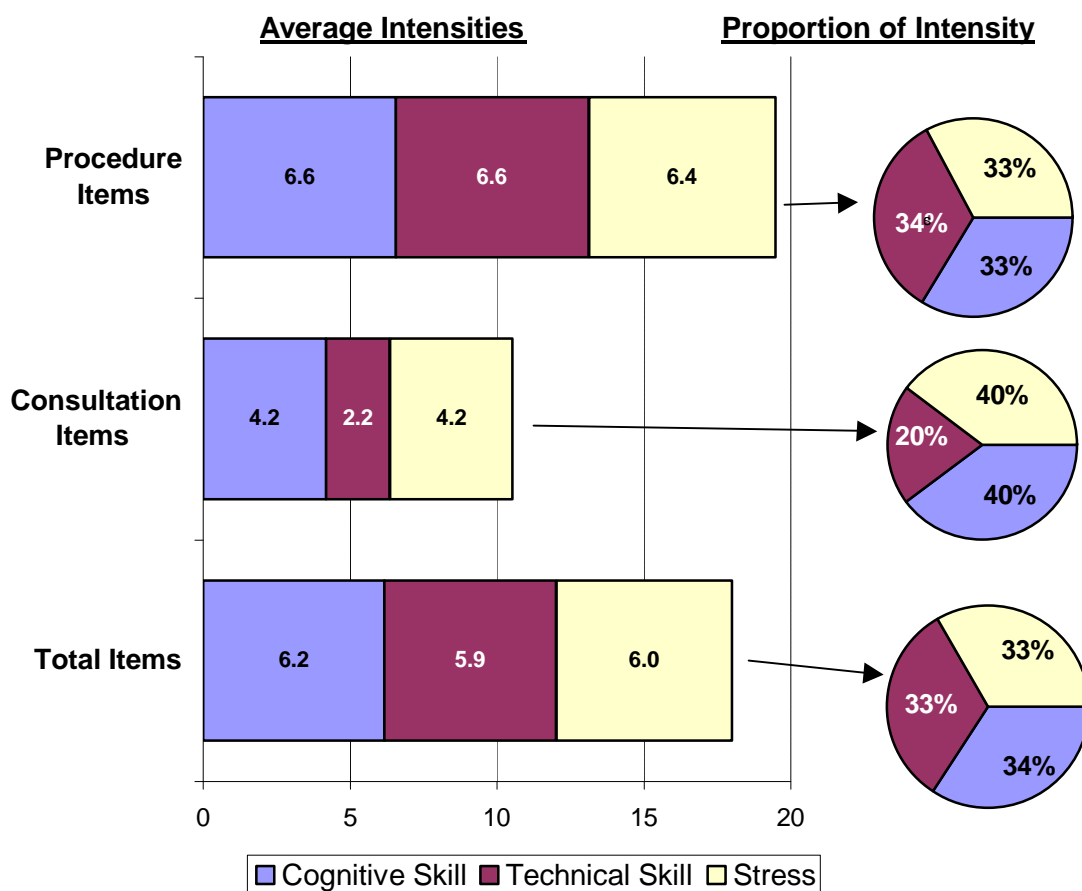
The mean ratings were 6.2 for cognitive skill, 5.9 for technical skill and 6.0 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
<b>Mean</b>	6.2	5.9	6.0	18.1
<b>SD</b>	2.3	2.7	2.2	7.1
<b>Min</b>	1.0	1.0	1.0	3.0
<b>Max</b>	10.0	10.0	10.0	30.0

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. They are provided for procedure items, consultation items and all items.

**Figure 3.1**



A summary breakdown is also provided in Table 3.2.

**Table 3.2**

<b>Average Intensity Ratings</b>	<b>Cognitive Skill</b>	<b>Technical Skill</b>	<b>Stress</b>	<b>Total Intensity</b>
<b>Procedure Items</b>	6.5	6.6	6.4	19.5
<b>Consultation Items</b>	4.2	2.1	4.2	10.5
<b>Total Items</b>	6.2	5.9	6.0	18.1

<sup>2</sup> Please note that intensity descriptions are abbreviations only.

- a) Cognitive Skill = Cognitive Skill, Clinical Judgement and Communication Skills
- b) Technical Skill = Technical Skill and Physical Effort
- c) Stress = Stress Due to Risk

## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (that is time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4.1. The procedure items were given very much higher ranks than the consultation items (sum of ranks test,  $p < 0.001$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Procedure	143	1	170	76.29
Consultation	28	49	171	135.57
<b>Total</b>	171	1	171	86.00

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. The Neurosurgery Consensus Group assessed 64 link items. These comprised 23 of their 28 consultation items and 41 of the 143 procedure items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.2. The ranks given to link items were very much lower than those given to non-link items (sum of ranks test,  $p < 0.001$ ).

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Consultation-Link	23	127	171	148.35
Procedure-Link	41	5	170	88.30
<b>Total Link</b>	64	5	171	109.88
Consultation-Non-link	5	49	112	76.80
Procedure-Non-link	102	1	167	71.47
<b>Total Non-link</b>	107	1	167	71.71
<b>Total</b>	171	1	171	86.00

Good maps of Neurosurgery's items to CPT were available for 25 of their 171 items. A breakdown of the ranks given to these good map items and to the poor/no-map items is set out in Table 4.3. Good map items were ranked lower than poor/no-map items but the difference was not significant.

Table 4.3

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Good Map	25	13	170	102.8
Poor/Non Map	146	1	171	83.1
<b>Total</b>	171	1	171	86.0

## Section 5 Relative Value Implications

---

For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases) these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analysed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for Neurosurgery is 1 to 288.

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the range in relative rates of pay is 1 to 4.9. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the range in relative rates of pay is 1 to 6.7.

These ranges in relative rates of pay are higher than the median observed for specialties examined so far<sup>3</sup>. However, in terms of deviations in rates of pay, it should still be possible to align Neurosurgery's rankings and ratings with those of the other groups.

<sup>3</sup> The median range in relative rates of pay depending on intensity alone is 1 to 3.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.5.

Comparisons between consultation and procedure items, between link items and non-link items and between good map items and poor/no-map items in terms of imputed relative value (IRV) are set out in Table 5.1.

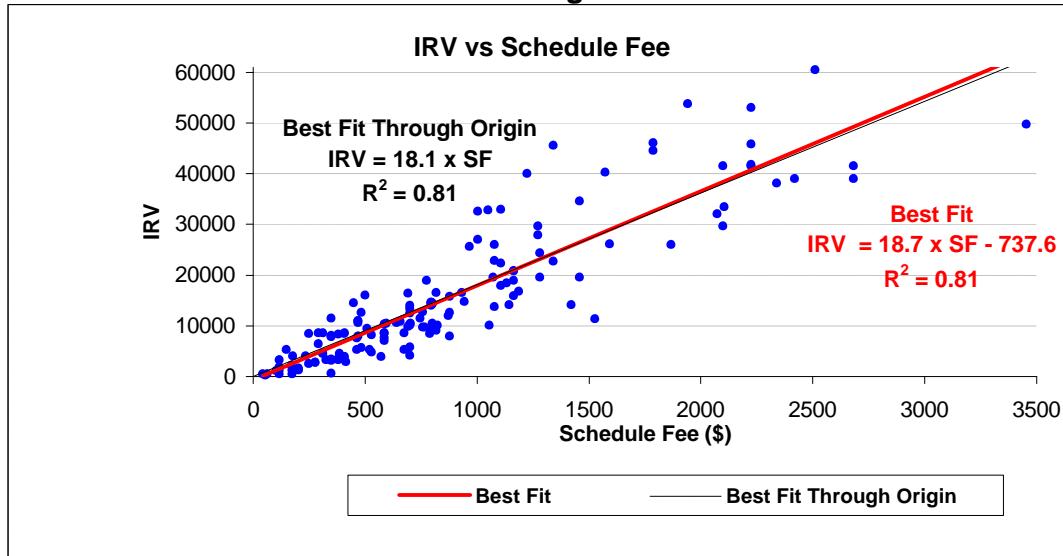
The procedure items were given very much greater imputed relative values than the consultation items (t tests,  $p < 0.001$ ), while the link items were given very much lower imputed relative values than the non-link items (t tests,  $p < 0.001$ ). There was no significant difference between the imputed relative values given to good map items and poor/no-map items when absolute values were tested, but when log transformed data was tested, good map items were shown to have significantly lower imputed relative values than poor/no-map items (t test,  $p < 0.05$ ).

**Table 5.1**

Type of Item	Number Reviewed	IRVs		
		Mean $\pm$ SD	Low	High
<b>Consultation</b>	28	3515 $\pm$ 4112	210	16065
<b>Procedure</b>	143	15640 $\pm$ 13623	315	60480
<b>Link</b>	64	20151 $\pm$ 17929	315	60480
<b>Non-link</b>	107	9769 $\pm$ 7323	210	29700
<b>Good Map</b>	25	9206 $\pm$ 9343	315	40320
<b>Poor/No Map</b>	146	14416 $\pm$ 13790	210	60480
<b>Total</b>	171	13655 $\pm$ 13340	210	60480

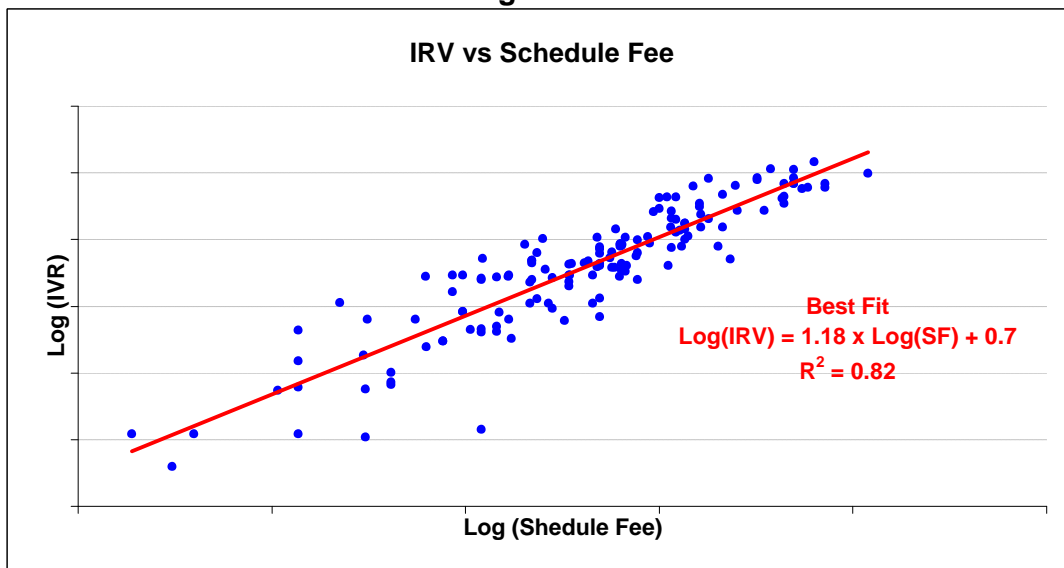
A plot of Neurosurgery's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). Two lines of Best Fit are also shown and they both explain 81% of the variation in imputed relative values.

Figure 5.1



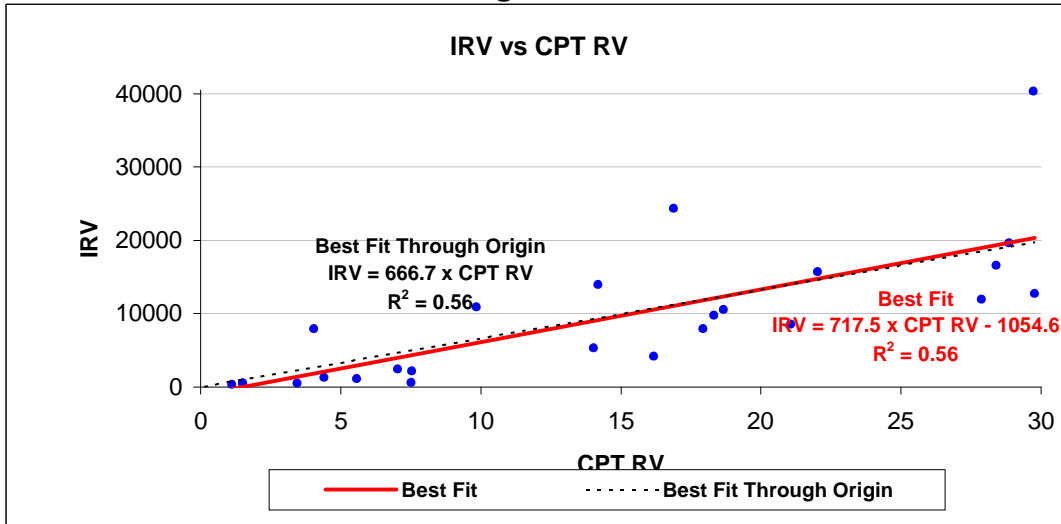
We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit is only marginally better than that for IRV against Schedule Fee, explaining 82% of the variation as against 81% previously.

Figure 5.2



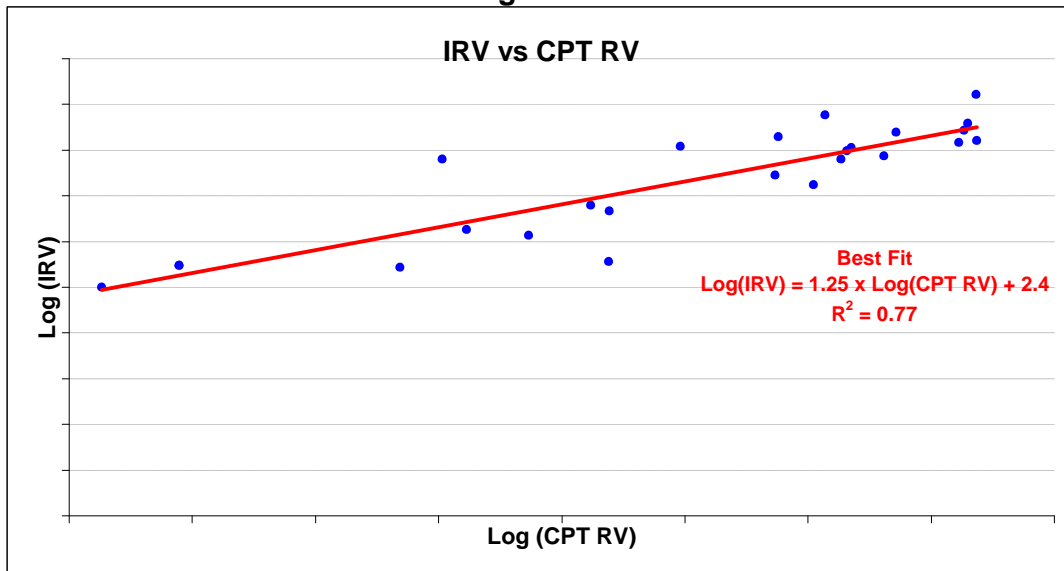
A plot of Neurosurgery's IRVs against CPT RV is set out in Figure 5.3. The fit is poor ( $R^2 = 56\%$ ). When MBS Items 40706 and 40801 are removed the fit improves to  $R^2 = 73\%$ .

Figure 5.3



As for Schedule Fee, we might expect the magnitude of error deviation to increase with CPT RV. Accordingly, a log/log plot is also provided (Figure 5.4). The fit improves from  $R^2 = 56\%$  to  $R^2 = 77\%$ .

Figure 5.4





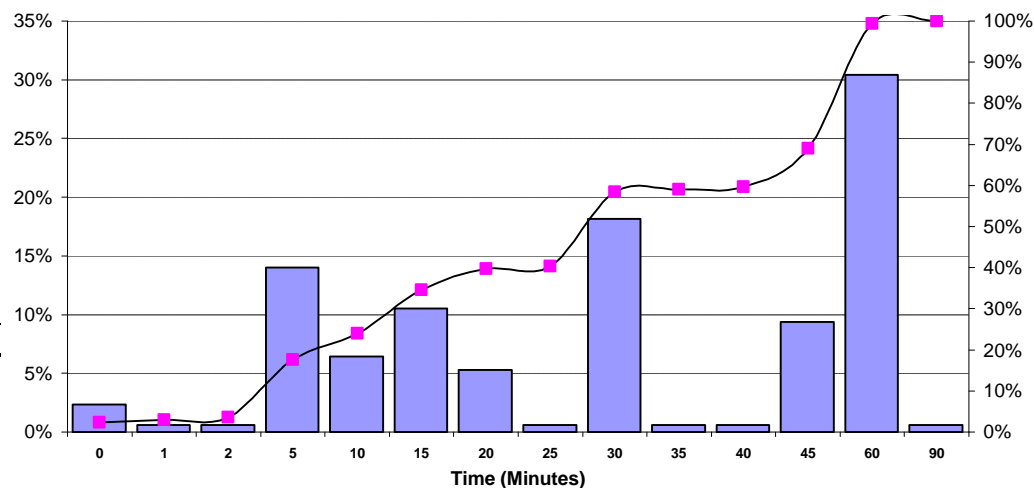
## Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Pre-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	4	2.3%	2.3%
1	1	0.6%	2.9%
2	1	0.6%	3.5%
5	24	14.0%	17.5%
10	11	6.4%	24.0%
15	18	10.5%	34.5%
20	9	5.3%	39.8%
25	1	0.6%	40.4%
30	31	18.1%	58.5%
35	1	0.6%	59.1%
40	1	0.6%	59.6%
45	16	9.4%	69.0%
60	52	30.4%	99.4%
90	1	0.6%	100.0%
<b>Total</b>	<b>171</b>	<b>100%</b>	

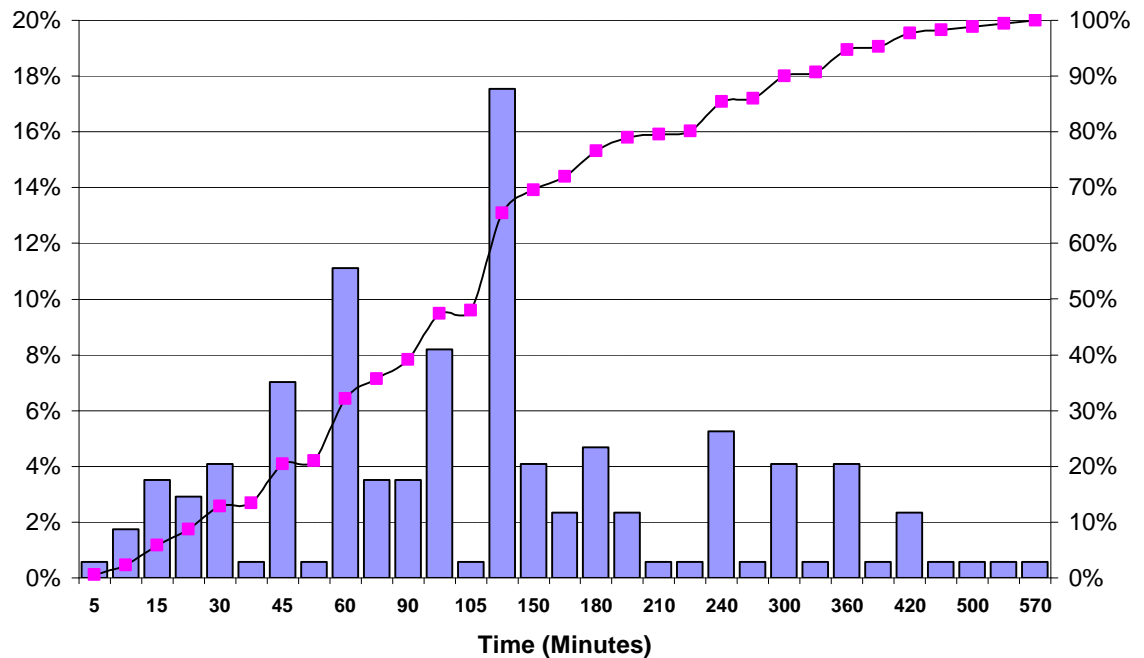
Number of missing values = 0



# Attachment 1 - Continued

## Summary Report for Intra-Service Time

Time	Freq.	Percentage	Cum. Percentage
5	1	0.6%	0.6%
10	3	1.8%	2.3%
15	6	3.5%	5.8%
20	5	2.9%	8.8%
30	7	4.1%	12.9%
40	1	0.6%	13.5%
45	12	7.0%	20.5%
50	1	0.6%	21.1%
60	19	11.1%	32.2%
75	6	3.5%	35.7%
90	6	3.5%	39.2%
100	14	8.2%	47.4%
105	1	0.6%	48.0%
120	30	17.5%	65.5%
150	7	4.1%	69.6%
160	4	2.3%	71.9%
180	8	4.7%	76.6%
200	4	2.3%	78.9%
210	1	0.6%	79.5%
220	1	0.6%	80.1%
240	9	5.3%	85.4%
270	1	0.6%	86.0%
300	7	4.1%	90.1%
350	1	0.6%	90.6%
360	7	4.1%	94.7%
390	1	0.6%	95.3%
420	4	2.3%	97.7%
470	1	0.6%	98.2%
500	1	0.6%	98.8%
510	1	0.6%	99.4%
570	1	0.6%	100.0%
<b>Total</b>	<b>171</b>	<b>100.0%</b>	



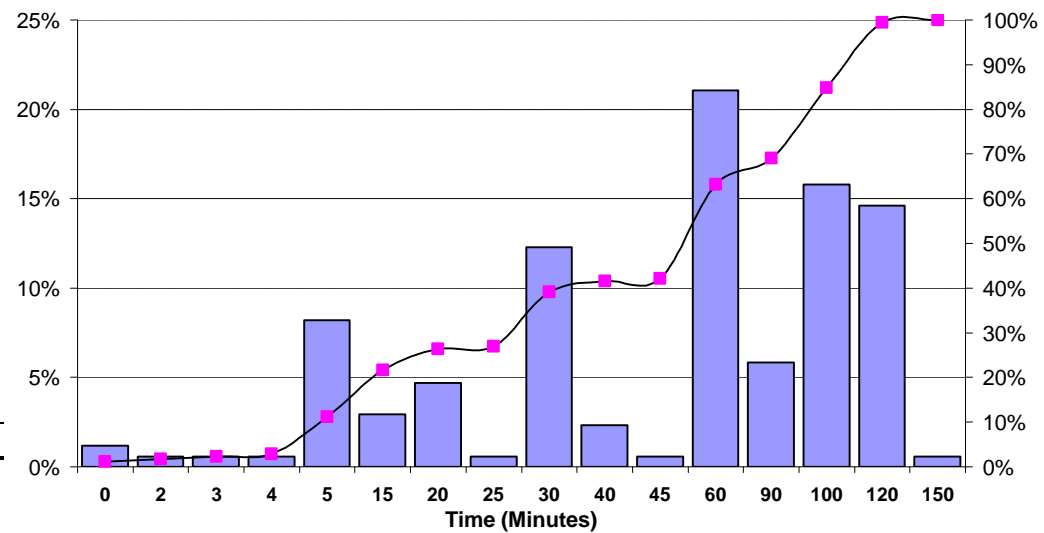
Number of missing values = 0

## Attachment 1 - Continued

### Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	2	1.2%	1.2%
2	1	0.6%	1.8%
3	1	0.6%	2.3%
4	1	0.6%	2.9%
5	14	8.2%	11.1%
15	5	2.9%	21.6%
20	8	4.7%	26.3%
25	1	0.6%	26.9%
30	21	12.3%	39.2%
40	4	2.3%	41.5%
45	1	0.6%	42.1%
60	36	21.1%	63.2%
90	10	5.8%	69.0%
100	27	15.8%	84.8%
120	25	14.6%	99.4%
150	1	0.6%	100.0%
<b>Total</b>	<b>171</b>	<b>100.0%</b>	

Number of missing values = 0



**COMPARISON OF NEUROSURGERY (NEUS)  
INTRA TIME ESTIMATES WITH OTHER ESTIMATES**

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x NEUS/OTE
	ID	Type	Definition of Time		NEUS	OTE	
OPERATION TIME (OPT) *	H1	Priv	Op Start to Op End	3	43.3	46.7	92.8
	H4	Priv	Op Start to Op End	5	46.0	37.2	123.6
	H6	Priv	Op Start to Op End	1	20.0	20.7	96.5
	H8	Priv	Surgeon Start to Drapes Removed	18	86.4	89.6	96.4
	H9A	Priv	Inpatient, Surgery Start to Surgery Finish	54	138.3	112.1	123.4
	H9B	Day	Day Surgery, Surgery Start to Surgery Finish	3	60.0	33.7	178.2
	H10	Priv	Op Start to Op End	1	20.0	14.0	142.9
	H11	Priv	Knife to Skin - Application of Dressing	9	101.7	119.9	84.8
	H13	Priv	Surgeon Start to Surgeon Finish	1	20.0	17.0	117.7
	H15	Priv	Op Start to Op End	49	130.6	89.2	146.4
	H16	Pub	Proc Start to Proc End	66	145.8	148.6	98.1
	H17	Pub	Surgical Start to Surgical End	81	158.5	184.3	86.0
	H18	Priv	Proc Start to Proc End	49	127.4	90.4	140.8
	H19	Pub	Positioning to Dressings Applied	77	159.4	156.8	101.7
	H20	Pub	Preparation/Positioning to End Dressings	10	63.5	51.6	123.1
	APHA	Priv	Procedure Time	43	140.5	109.7	128.0
	CANS	Pub & Priv	Op Start to Op Finish	49	147.5	117.3	125.7
Deloitte	Pub & Priv	Procedure Time	19	118.2	92.5	127.8	
OPERATION TIME 2 (OPT 2)	H8	Priv	Surgeon Start to Xfer from OR	19	84.0	92.9	90.4
	H13	Priv	Surgeon Start to Xfer from OR	1	20.0	22.0	90.9
	H15	Priv	Op Start to Recovery Admission	49	130.8	99.7	131.3
	H16	Pub	Proc Start to Recovery Admission	66	145.8	158.8	91.8
	H17	Pub	Surgical Start to Xfer from OR	86	159.0	200.8	79.2
	H18	Priv	Proc Start to Xfer from OR	48	129.1	100.1	128.9
	H19	Pub	Positioning to Ex Theatre	85	156.5	165.9	94.3
	H20	Pub	Preparation/Positioning to Admit Recovery/ICU	11	63.2	58.4	108.2
CANS	Pub & Priv	Operation Start to Anaesthetist Finish	49	147.5	125.2	117.7	
ANAESTHETIC TIME (OAT)	MBS	Pub & Priv	Anaesthetic Time	140	154.0	198.7	77.5
	H1	Priv	Anaesthetic Start to Op End	3	43.3	54.9	78.9
	H4	Priv	Anaesthetic Start to Op End	5	46.0	54.8	83.9
	H5	Priv	Anaesthetic Start to Surgery End	37	125.0	130.3	95.9
	H6	Priv	Anaesthetic Start to Op End	1	20.0	29.9	66.9
	H8	Priv	Patient in Theatre to Drapes Removed	19	88.2	112.7	78.2
	H9A	Priv	Inpatient in A. Bay to Surgery Finish	54	140.0	135.3	103.5
	H9B	Day	Day Surgery, Anaesthetist Start to Surgery Finish	3	60.0	43.4	138.1
	H10	Priv	Anaesthetic Start to Op End	1	20.0	24.1	83.0
	H13	Priv	Anaesthetic Start to Surgeon End	1	20.0	29.0	69.0
	H15	Priv	Anaesthetic Start to Op End	50	131.2	111.6	117.5
	H16	Pub	Anaesthetic Start to Proc End	66	146.7	169.1	86.8
	H17	Pub	Anaesthetic Start to Surgical End	85	164.7	232.2	70.9
	H18	Priv	Anaesthetic Start to Proc End	50	126.8	110.3	115.0
	H19	Pub	Anaesthetic Start to Dressings Applied	81	154.6	185.8	83.2
H20	Pub	Anaesthetist Start to End Dressings	11	63.2	70.1	90.1	
CANS	Pub & Priv	Anaesthetist Start to Operation Finish	49	147.5	132.6	111.2	
Deloitte	Pub & Priv	Anaesthetic Time	19	118.2	108.8	108.6	
ANAESTHETIC TIME 2 (OAT 2)	H8	Priv	Patient in Theatre to Xfer from OR	20	91.0	125.6	72.5
	H11	Priv	Anaesthetic Start to Xfer to Recovery	9	101.7	141.9	71.7
	H12	Pub	Anaesthetic Start to Xfer to Recovery	0			
	H13	Priv	Anaesthetic Start to Xfer from OR	1	20.0	34.0	58.8
	H14	Pub	Anaesthetic Start to Recovery Admission	81	157.9	190.4	82.9
	H15	Priv	Anaesthetic Start to Recovery Admission	52	137.3	133.3	103.0
	H16	Pub	Anaesthetic Start to Recovery Admission	66	146.7	179.4	81.8
	H17	Pub	Anaesthetic Start to Xfer from OR	87	165.2	248.8	66.4
	H18	Priv	Anaesthetic Start to Xfer from OR	50	126.8	118.5	107.0
	H19	Pub	Anaesthetic Start to Ex Theatre	86	154.0	197.2	78.1
	H20	Pub	Anaesthetist Start to Admit Recovery/ICU	11	63.2	79.8	79.2
	CANS	Pub & Priv	Anaesthetist Start to Anaesthetist Finish	49	147.5	140.5	104.9
	TIME IN THEATRE (THT)	H2	Priv	Total Time in Theatre	19	114.5	99.6
H3		Priv	Total Time in Theatre	1	20.0	50.3	39.8
H7		Day	Total Time in Theatre	4	55.0	30.5	180.4
H11		Priv	Dress, scrub etc. to Xfer to Recovery	9	101.7	163.8	62.1
H15		Priv	Theatre Reception to Recovery Admission	52	137.3	155.6	88.3
H19		Pub	In Op Suite to Ex Theatre	88	152.8	218.3	70.0
C'mix Pub		Pub	Casemix Public Theatre Time	7	80.0	52.5	152.4
C'mix Priv		Priv	Casemix Private Theatre Time	16	61.3	42.6	143.7
C'mix Other		Day & Other	Casemix Other Theatre Time	2	15.0	20.6	72.9
WA		Priv	WA Group Total Time in Theatre	71	135.4	127.0	106.6

\* Median ratio of NEUS intra time estimates to OPT (excluding H4, H6, H9A, H9B and H11)  
Unweighted = 123.1 %  
Weighted (for number of items in common) = 101.7 %

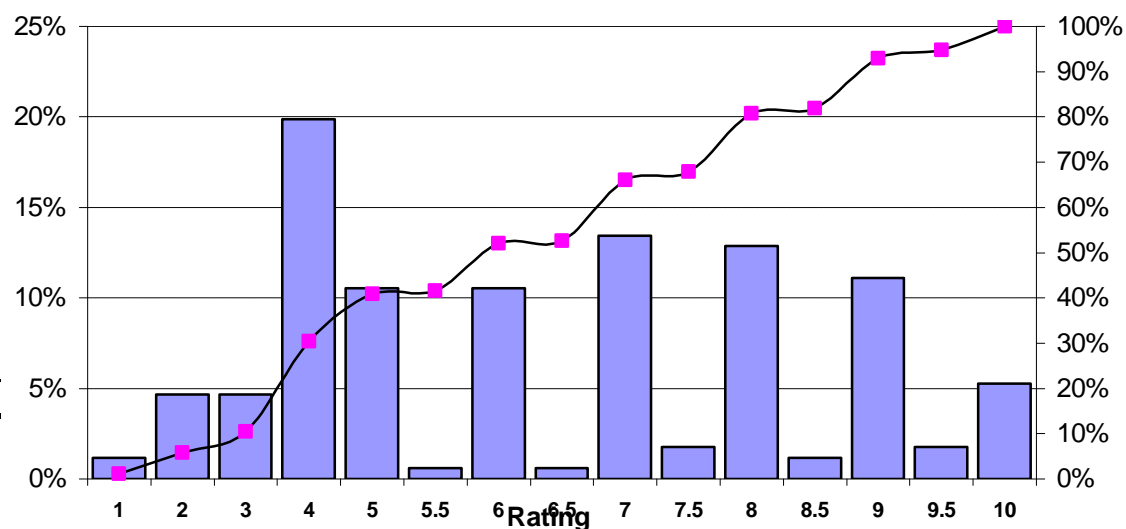
## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1	2	1.2%	1.2%
2	8	4.7%	5.8%
3	8	4.7%	10.5%
4	34	19.9%	30.4%
5	18	10.5%	40.9%
5.5	1	0.6%	41.5%
6	18	10.5%	52.0%
6.5	1	0.6%	52.6%
7	23	13.5%	66.1%
7.5	3	1.8%	67.8%
8	22	12.9%	80.7%
8.5	2	1.2%	81.9%
9	19	11.1%	93.0%
9.5	3	1.8%	94.7%
10	9	5.3%	100.0%
<b>Total</b>	<b>171</b>	<b>100.0%</b>	

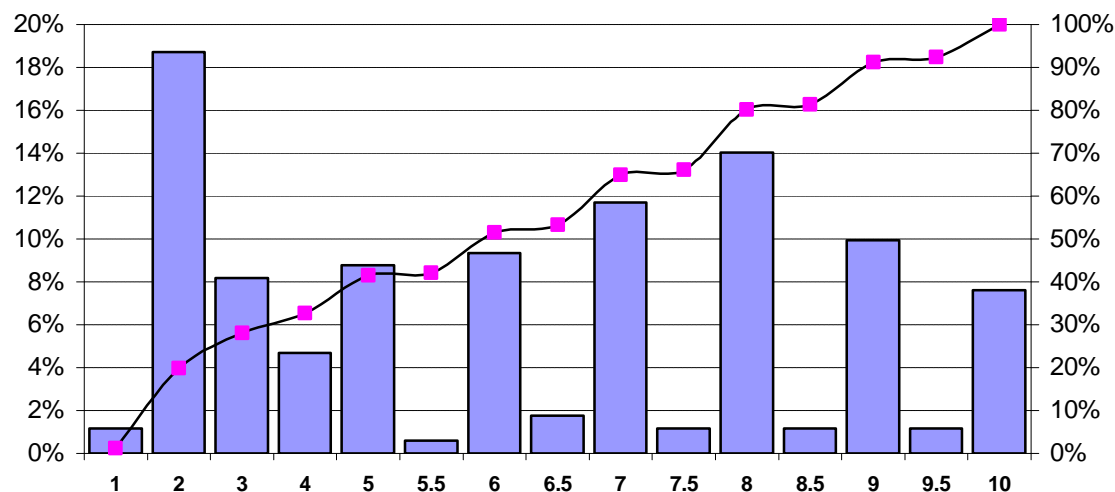
Number of missing values = 0



## Attachment 3 - Continued

### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1	2	1.2%	1.2%
2	32	18.7%	19.9%
3	14	8.2%	28.1%
4	8	4.7%	32.7%
5	15	8.8%	41.5%
5.5	1	0.6%	42.1%
6	16	9.4%	51.5%
6.5	3	1.8%	53.2%
7	20	11.7%	64.9%
7.5	2	1.2%	66.1%
8	24	14.0%	80.1%
8.5	2	1.2%	81.3%
9	17	9.9%	91.2%
9.5	2	1.2%	92.4%
10	13	7.6%	100.0%
<b>Total</b>	<b>171</b>	<b>100.0%</b>	

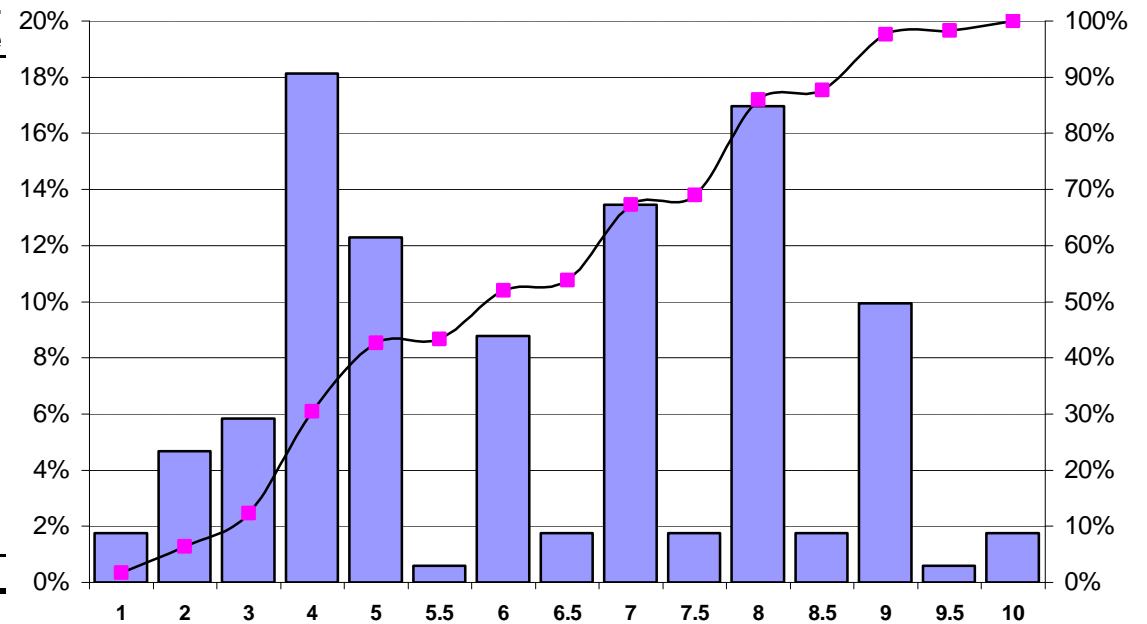


Number of missing values = 0

## Attachment 3 - Continued

### Summary Report for Stress

Rating	Freq.	Percentage	Cum. Percentage
1	3	1.8%	1.8%
2	8	4.7%	6.4%
3	10	5.8%	12.3%
4	31	18.1%	30.4%
5	21	12.3%	42.7%
5.5	1	0.6%	43.3%
6	15	8.8%	52.0%
6.5	3	1.8%	53.8%
7	23	13.5%	67.3%
7.5	3	1.8%	69.0%
8	29	17.0%	86.0%
8.5	3	1.8%	87.7%
9	17	9.9%	97.7%
9.5	1	0.6%	98.2%
10	3	1.8%	100.0%
<b>Total</b>	<b>171</b>	<b>100.0%</b>	



Number of missing values = 0

## Attachment 4 - Links with Other Specialties

The number of link items between Neurosurgery and the other Consensus Groups is set out below.

**Number of Links with Other Specialties**

<b>Specialty</b>	<b>Procedure Items</b>	<b>Consultation Items</b>	<b>Total Items</b>
Gen. Prac. & Emergency Med.	1	0	1
Oral and Maxillo-Facial Surgery	0	16	16
Obstetrics / Gynaecology	0	0	0
General Surgery	1	0	1
Cardio Thoracic Surgery	0	0	0
Orthopaedic Surgery	25	23	48
Paediatric Surgery	0	0	0
Plastic Surgery	3	10	13
Urology	0	0	0
Vascular Surgery	2	0	2
Ophthalmology	0	0	0
ENT	4	0	4
Anaesthesia	6	23	29
Dermatology	0	0	0
Paediatric / Thoracic Medicine	1	23	24
General Medicine	1	19	
Cardiology, Renal, ICU	0	0	0
Radiation, Oncology	0	0	0
Gastroenterology	0	0	0
Neurology	0	23	23
Haematology, Medical Oncology	0	0	0
Psychiatry	0	22	22
<b>Total</b>	<b>23</b>	<b>41</b>	<b>64</b>



## Glossary

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Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: <ol style="list-style-type: none"> <li>a) being a good map</li> <li>b) having as high a frequency as possible</li> <li>c) being well spread in terms of their rank.</li> </ol>
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.

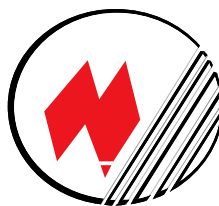
**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**Orthopaedic Surgery  
Summary Status Report**

**October 5, 1999**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

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This document outlines the results of an examination of the information sent to the NCCH by the Orthopaedic Surgery Consensus Group.

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 579 items. These comprised 514 procedure items and 65 consultation items.

Analysis of this information showed:

- The median ratio of Orthopaedic Surgery's intra time estimates to NCCH's Theatre Times Database observed procedure times was 128.1%. This implies a strong tendency to over estimate intra times,
- The group gave significantly higher ranks to procedure items than to consultation items and significantly lower ranks to link items than non-link items ( $p < 0.001$ ). However there was no bias in the ranking of potential core items.
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 2.87. This is less than the median observed for specialties so far examined. However it is consistent with the better sets of rankings and ratings. In terms of deviations in rates of pay, there shouldn't therefore be any major difficulty in aligning Orthopaedic Surgery's rankings and ratings with those of the other groups at a similar stage of development.
- The procedure items were given much greater imputed relative values<sup>1</sup> than the consultation items and the link items were given much lower imputed relative values than the non-link items ( $p < 0.001$ ). There was no significant difference between the imputed relative values given to good map items and those given to poor / no-map items.
- The correlation between the imputed relative values for Orthopaedic Surgery and the Medicare Benefits Schedule Fee was reasonable ( $R^2 = 81\%$ ). The correlation between the Group's imputed relative values and CPT RV was not as good ( $R^2 = 70\%$ ).

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for Orthopaedic Surgery are set out in Table 2.1 together with associated standard deviations and ranges.

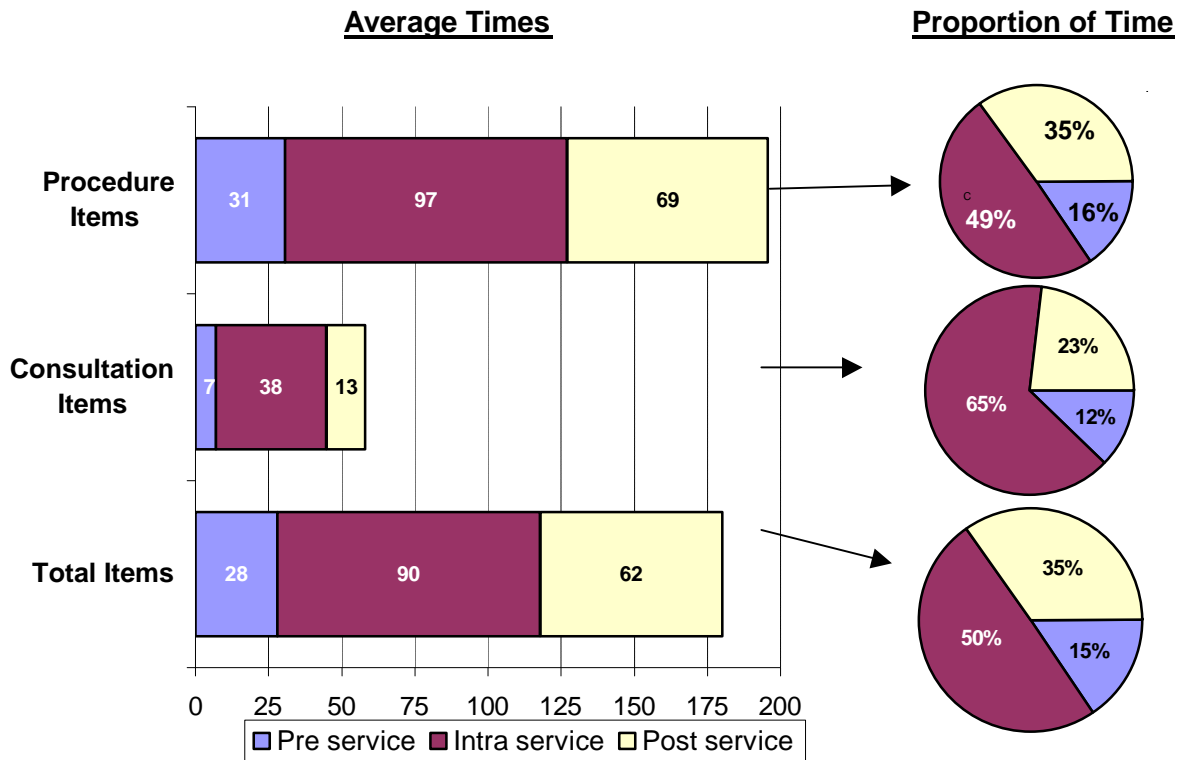
The mean intra service time was 90 minutes and the mean total time was 180 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
Mean	28	90	62	180
SD	11	65	30	95
Min	0	0	0	15
Max	100	360	180	580

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for procedure items, consultation items and all items.

**Figure 2.1**



A summary breakdown is also provided in Table 2.2.

**Table 2.2**

<b>Average Times</b>	<b>Pre Service</b>	<b>Intra Service</b>	<b>Post Service</b>	<b>Total Time</b>
<b>Procedure Items</b>	30.6	96.5	68.8	195.9
<b>Consultation Items</b>	7.1	37.7	13.4	58.2
<b>Total Items</b>	28.0	89.9	62.5	180.4

Orthopaedic Surgery's intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies.

The median ratio of Orthopaedic Surgery's intra time estimates to the observed procedure times was 128.1%. This implies a strong tendency by this Consensus Group to over estimate their intra times. A more detailed analysis is provided in Attachment 2.

## Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for Psychiatry are set out in Table 3.1 together with associated standard deviations and ranges.

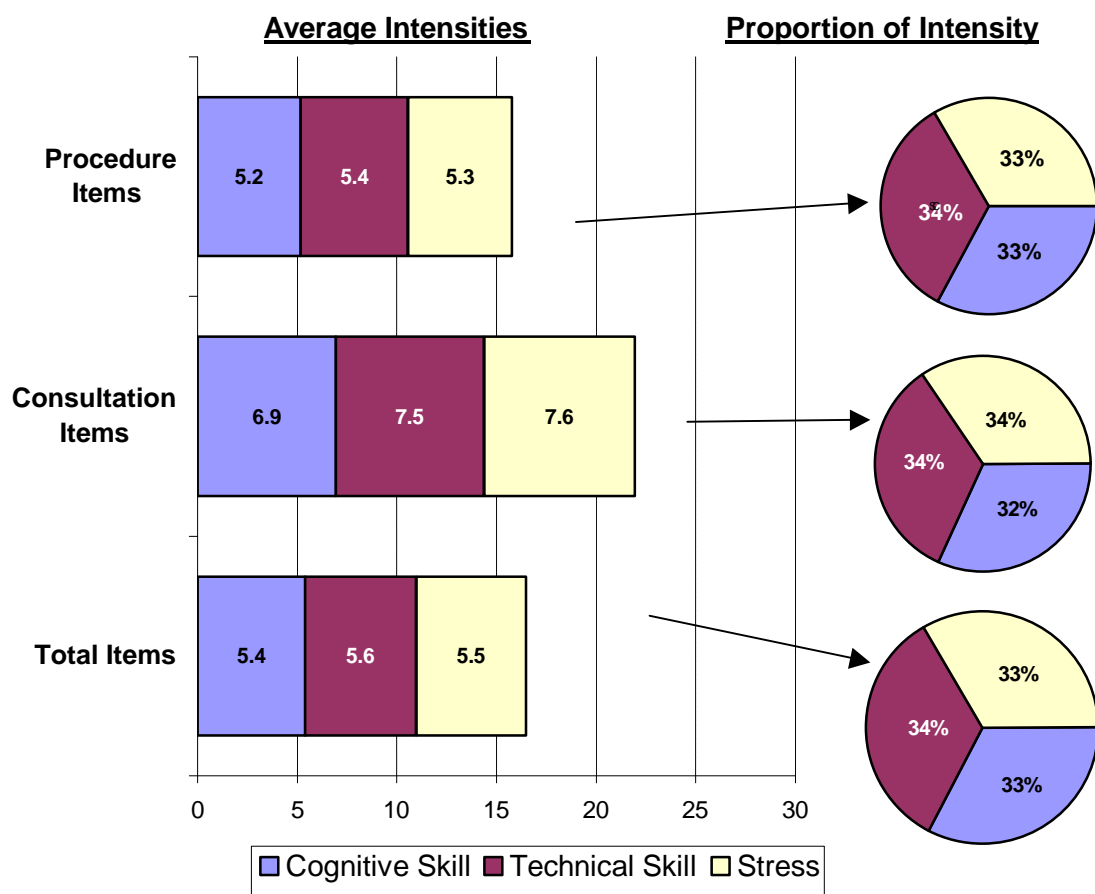
The mean ratings were 5.4 for cognitive skill, 5.6 for technical skill and 5.5 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
<b>Mean</b>	5.4	5.6	5.5	16.5
<b>SD</b>	2.5	2.5	2.5	7.2
<b>Min</b>	0.5	0.5	0.5	1.5
<b>Max</b>	10.0	10.0	10.0	30.0

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. They are provided for procedure items, consultation items and all items.

**Figure 3.1**



A summary breakdown is also provided in Table 3.2.

**Table 3.2**

<b>Average Intensity Ratings</b>	<b>Cognitive Skill</b>	<b>Technical Skill</b>	<b>Stress</b>	<b>Total Intensity</b>
<b>Procedure Items</b>	5.2	5.4	5.3	15.9
<b>Consultation Items</b>	6.9	7.5	7.6	22.0
<b>Total Items</b>	5.4	5.6	5.5	16.5

<sup>2</sup> Please note that intensity descriptions are abbreviations only.

a) Cognitive Skill = Cognitive Skill, Clinical Judgement and Communication Skills

b) Technical Skill = Technical Skill and Physical Effort

c) Stress = Stress Due to Risk



## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (that is time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4.1. The procedure items were given very much higher ranks than the consultation items (sum of ranks test,  $p < 0.001$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Procedure	514	1	568.5	266.53
Consultation	65	267	577	475.58
<b>Total</b>	<b>579</b>	<b>1</b>	<b>577</b>	<b>290.00</b>

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. The Orthopaedic Surgery Consensus Group assessed 186 link items. These comprised all 65 of their consultation items and 121 of the 514 procedure items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.2. The ranks given to link items were very much lower than those given to non-link items (sum of ranks test,  $p < 0.001$ ).

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Consultation-Link	65	267	577	475.58
Procedure-Link	121	2	568.5	348.60
<b>Total Link</b>	<b>186</b>	<b>2</b>	<b>577</b>	<b>392.98</b>
Non-Link (Procedure)	393	1	562	241.26
<b>Total</b>	<b>579</b>	<b>1</b>	<b>577</b>	<b>290.00</b>

Good maps of Orthopaedic Surgery's items to CPT were available for 106 of their 579 items. A breakdown of the ranks given to these good map items and to the poor/non map items is set out in Table 4.3. The ranks given to the good map items were not significantly different from those given to the poor/non map items. This means that good map items (i.e. potential core items) are spread reasonably evenly throughout the ranks.

**Table 4.3**

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
<b>Good Map</b>	106	14.5	562	306.7
<b>Poor/Non Map</b>	473	1	577	286.3
<b>Total</b>	579	1	577	290.0

## Section 5 Relative Value Implications

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For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analysed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for Orthopaedic Surgery is 1 to 54.5.

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the range in relative rates of pay is 1 to 1.90. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the range in relative rates of pay is 1 to 2.87.

These ranges in relative rates of pay are slightly lower than the median observed for specialties examined so far<sup>3</sup>. Nevertheless, they are consistent with the better sets of rankings and ratings. In terms of deviations in rates of pay, there shouldn't therefore be any major difficulty in aligning Orthopaedic Surgery's rankings and ratings with those of the other groups at a similar stage of development.

<sup>3</sup> The median range in relative rates of pay depending on intensity alone is 1 to 3.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.5.

Comparisons between Consultation and Procedure Items, between Link Items and Non-link Items and between Good Map Items and Poor/No Map Items in terms of imputed relative value (IRV) are set out in Table 5.1.

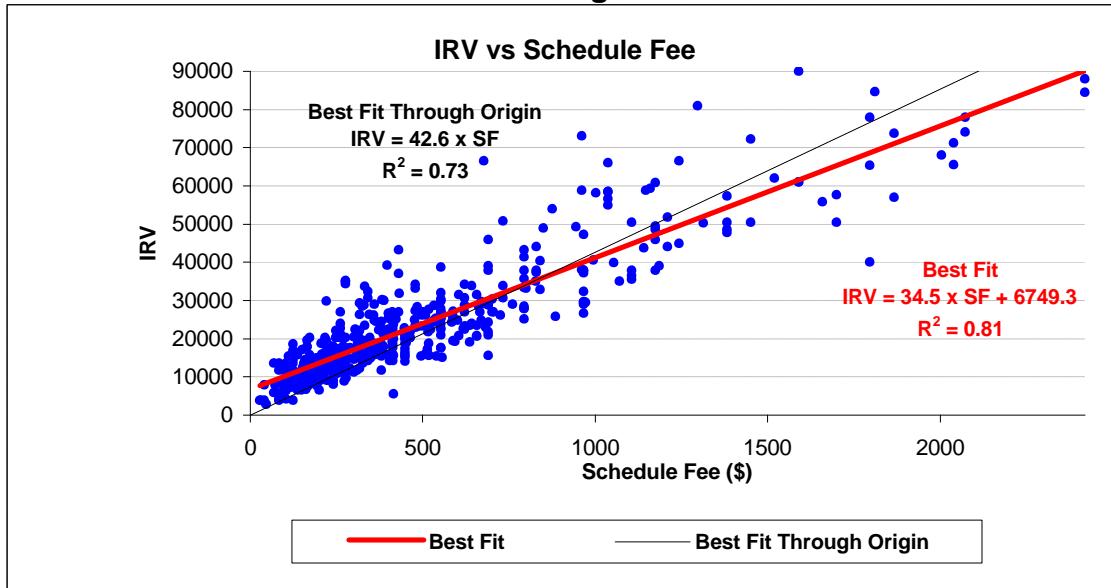
The procedure items were given much greater imputed relative values than consultation items and the link items were given much lower imputed relative values than the non-link items (t tests,  $p < 0.001$ ). There was no significant difference between the imputed relative values given to good map items and those given to poor/no-map items.

**Table 5.1**

Type of Item	Number Reviewed	IRVs		
		Mean $\pm$ SD	Low	High
<b>Consultation</b>	65	8802 $\pm$ 5249	1650	18050
<b>Procedure</b>	514	23429 $\pm$ 15545	2800	90000
<b>Link</b>	186	14645 $\pm$ 12107	1650	88000
<b>Non-link</b>	393	25168 $\pm$ 15728	3850	90000
<b>Good Map</b>	106	19188 $\pm$ 10707	3850	66600
<b>Poor/No Map</b>	473	22370 $\pm$ 16284	1650	90000
<b>Total</b>	579	21787 $\pm$ 15456	1650	90000

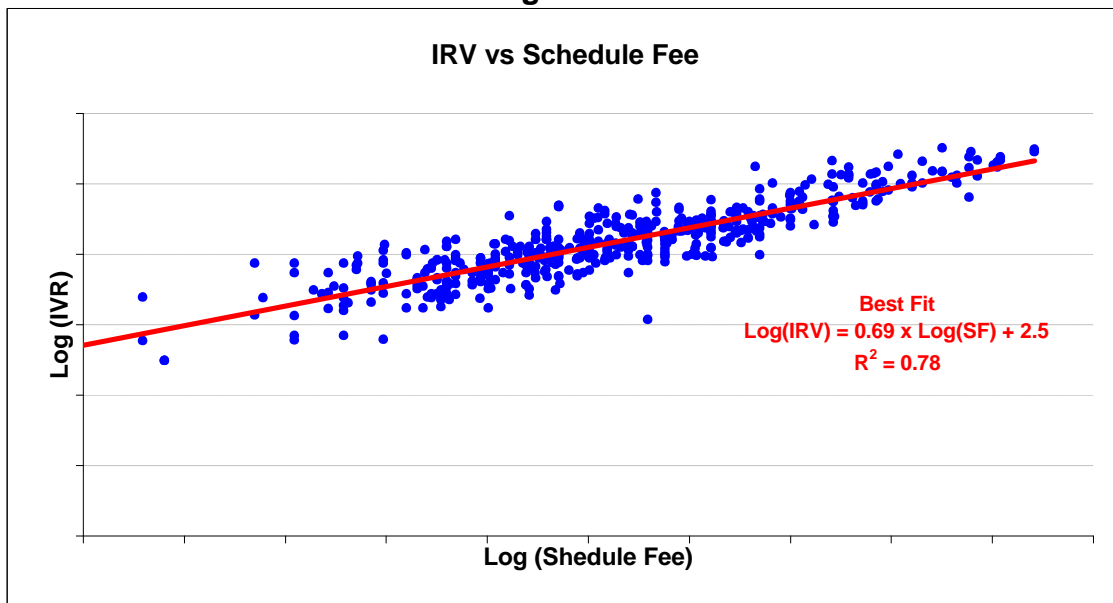
A plot of Orthopaedic Surgery's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). Two attempts to fit the data are also shown. The line of "Best Fit" explains 81% of the variation in imputed relative values while the line of "Best Fit Through the Origin" only explains 73%. The difference between these two lines is contrary to what might have been anticipated. Because Schedule Fee incorporates non-professional work content components, we might have anticipated the red line to start off below the dotted black line. The fact that it does not, could mean that the group has given their low value items proportionally greater imputed relative values.

Figure 5.1



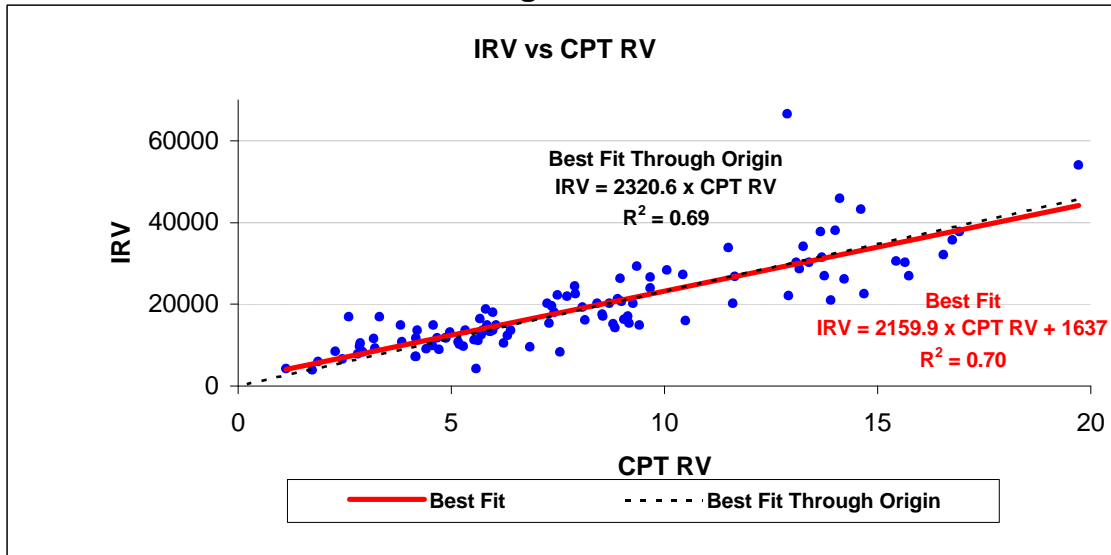
We might also expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit is not as good as that for IRV against Schedule Fee, explaining 78% of the variation as against 81% previously.

Figure 5.2



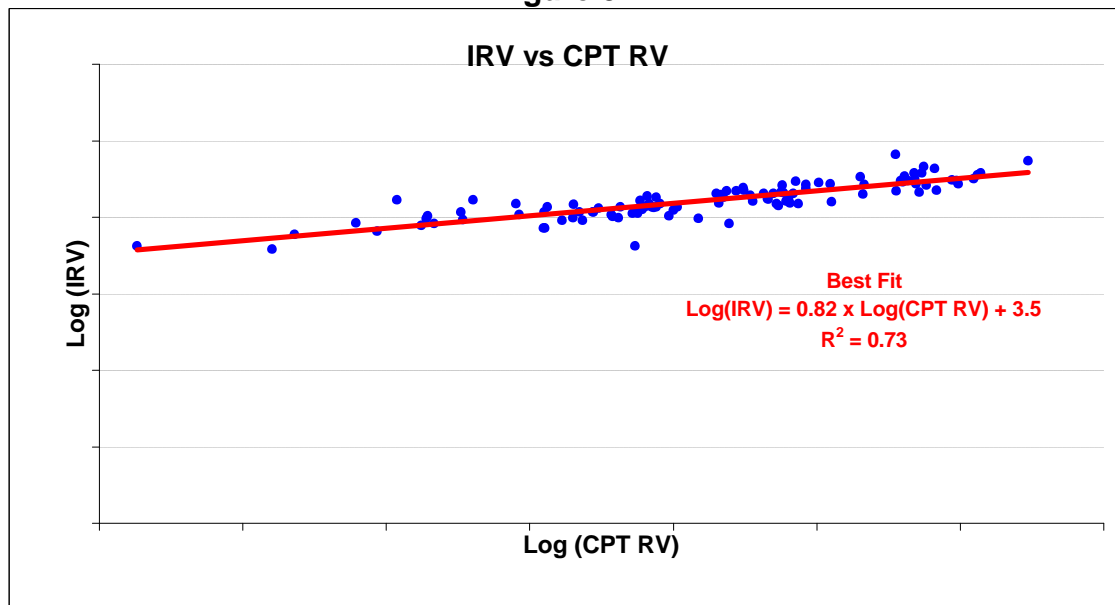
A plot of Orthopaedic Surgery's IRVs against CPT RV is set out in Figure 5.3. The fit is satisfactory and when the outlier (MBS Item 50399) is removed the fit improves from  $R^2 = 70\%$  to  $R^2 = 77\%$ .

Figure 5.3



As for Schedule Fee, we might expect the magnitude of error deviation to increase with CPT RV. Accordingly, a log/log plot is also provided (Figure 5.4). The fit improves from  $R^2 = 70\%$  to  $R^2 = 73\%$ .

Figure 5.4



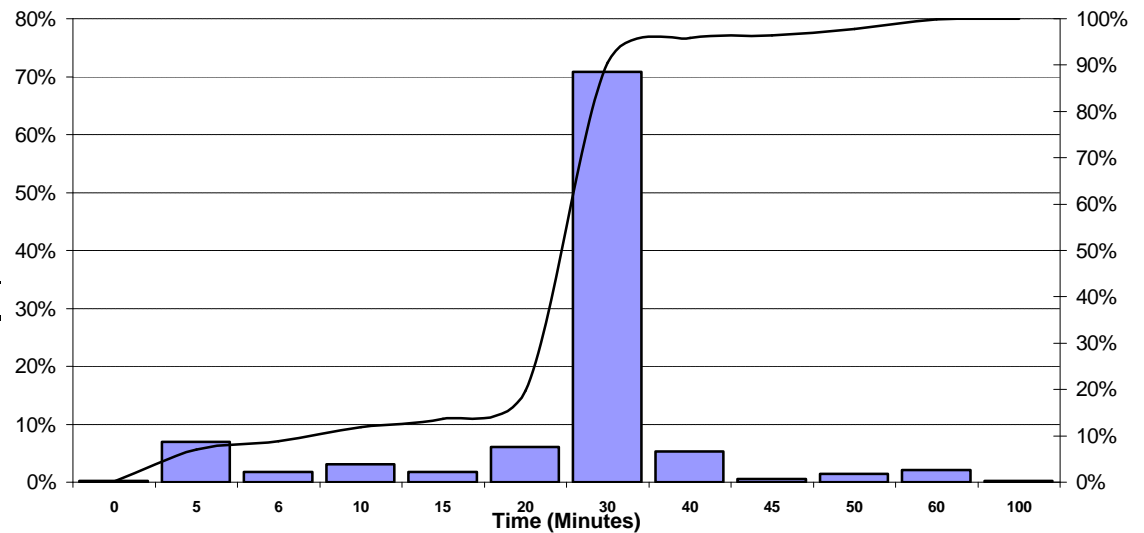
## Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Pre-Service Time

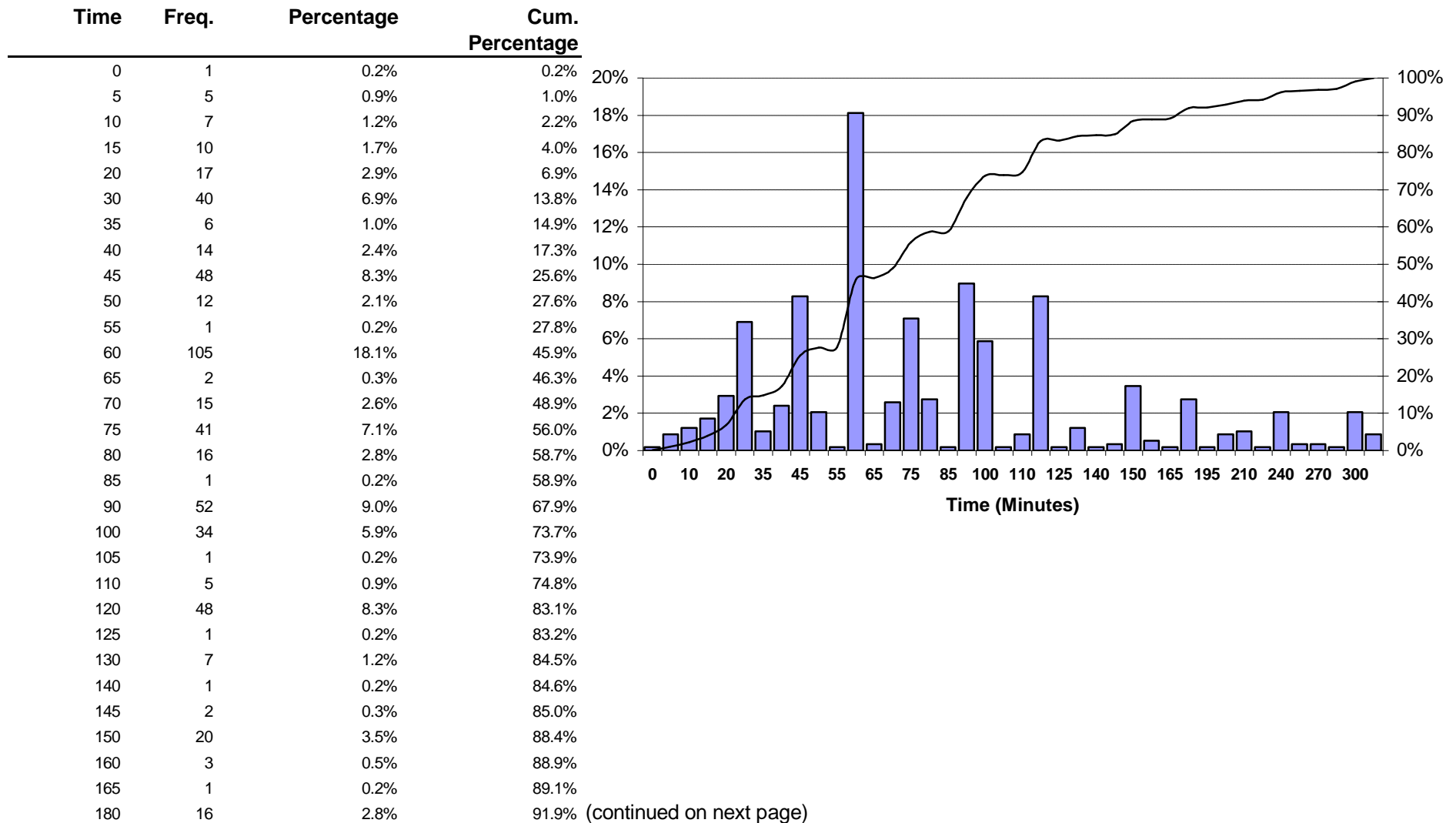
Time	Frequen cy	Percentage	Cum. Percentage
0	1	0.2%	0.2%
5	40	6.9%	7.1%
6	10	1.7%	8.8%
10	18	3.1%	11.9%
15	10	1.7%	13.6%
20	35	6.0%	19.7%
30	410	70.8%	90.5%
40	31	5.4%	95.9%
45	3	0.5%	96.4%
50	8	1.4%	97.8%
60	12	2.1%	99.8%
100	1	0.2%	100.0%
<b>Total</b>	<b>579</b>	<b>100.0%</b>	

Number of missing values = 0



# Attachment 1 - Continued

## Summary Report for Intra-Service Time





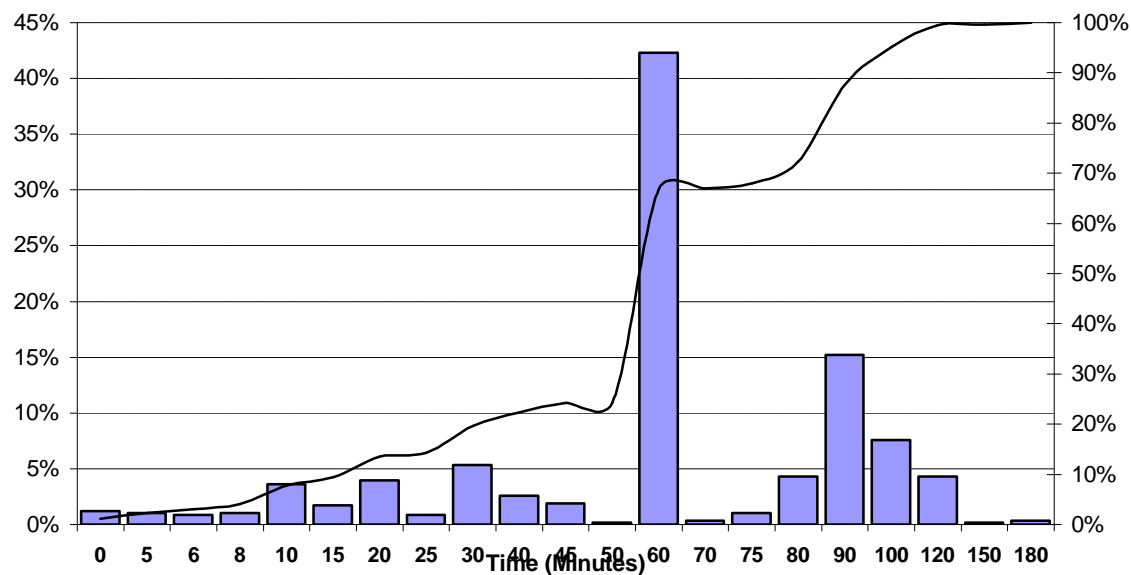
195	1	0.2%	92.1%
200	5	0.9%	92.9%
210	6	1.0%	94.0%
215	1	0.2%	94.1%
240	12	2.1%	96.2%
260	2	0.3%	96.5%
270	2	0.3%	96.9%
280	1	0.2%	97.1%
300	12	2.1%	99.1%
360	5	0.9%	100.0%
<hr/>			
Total	579	100.0%	
<hr/>			

Number of missing values = 0

## Attachment 1 - Continued

### Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	7	1.2%	1.2%
5	6	1.0%	2.2%
6	5	0.9%	3.1%
8	6	1.0%	4.1%
10	21	3.6%	7.8%
15	10	1.7%	9.5%
20	23	4.0%	13.5%
25	5	0.9%	14.3%
30	31	5.4%	19.7%
40	15	2.6%	22.3%
45	11	1.9%	24.2%
50	1	0.2%	24.4%
60	245	42.3%	66.7%
70	2	0.3%	67.0%
75	6	1.0%	68.0%
80	25	4.3%	72.4%
90	88	15.2%	87.6%
100	44	7.6%	95.2%
120	25	4.3%	99.5%
150	1	0.2%	99.7%
180	2	0.3%	100.0%
<b>Total</b>	<b>579</b>	<b>100.0%</b>	



Number of missing values = 0

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x ORTH/OTE
	ID	Type	Definition of Time		ORTH	OTE	
OPERATION TIME (OPT) *	H1	Priv	Op Start to Op End	93	76.4	44.6	171.2
	H4	Priv	Op Start to Op End	118	80.6	50.5	159.4
	H6	Priv	Op Start to Op End	67	67.5	44.0	153.5
	H8	Priv	Surgeon Start to Drapes Removed	231	81.3	57.9	140.4
	H9A	Priv	Inpatient, Surgery Start to Surgery Finish	102	98.4	85.5	115.2
	H9B	Day	Day Surgery, Surgery Start to Surgery Finish	58	58.5	41.3	141.9
	H10	Priv	Op Start to Op End	46	82.5	49.8	165.7
	H11	Priv	Knife to Skin - Application of Dressing	147	77.0	81.4	94.5
	H13	Priv	Surgeon Start to Surgeon Finish	71	66.3	44.4	149.3
	H15	Priv	Op Start to Op End	173	87.9	59.5	147.7
	H16	Pub	Proc Start to Proc End	236	85.7	75.6	113.4
	H17	Pub	Surgical Start to Surgical End	266	90.6	73.7	122.9
	H18	Priv	Proc Start to Proc End	253	88.0	64.1	137.3
	H19	Pub	Positioning to Dressings Applied	171	96.0	79.3	121.1
	H20	Pub	Preparation/Positioning to End Dressings	199	79.8	62.3	128.1
	APHA	Priv	Procedure Time	121	75.5	63.7	118.7
	CANS	Pub & Priv	Op Start to Op Finish	246	92.2	72.5	127.2
Deloitte	Pub & Priv	Procedure Time	121	76.6	55.0	139.2	
OPERATION TIME 2 (OPT 2)	H8	Priv	Surgeon Start to Xfer from OR	233	81.2	63.1	128.6
	H13	Priv	Surgeon Start to Xfer from OR	73	66.6	49.4	134.7
	H15	Priv	Op Start to Recovery Admission	179	88.7	65.2	136.1
	H16	Pub	Proc Start to Recovery Admission	237	85.6	80.4	106.4
	H17	Pub	Surgical Start to Xfer from OR	275	91.1	84.2	108.2
	H18	Priv	Proc Start to Xfer from OR	261	87.4	69.7	125.3
	H19	Pub	Positioning to Ex Theatre	229	92.6	84.3	109.9
	H20	Pub	Preparation/Positioning to Admit Recovery/ICU	205	80.0	71.8	111.4
CANS	Pub & Priv	Operation Start to Anaesthetist Finish	245	91.4	78.0	117.2	
ANAESTHETIC TIME (OAT)	MBS	Pub & Priv	Anaesthetic Time	506	97.5	107.5	90.6
	H1	Priv	Anaesthetic Start to Op End	98	78.2	66.2	118.1
	H4	Priv	Anaesthetic Start to Op End	126	78.9	79.8	98.9
	H5	Priv	Anaesthetic Start to Surgery End	173	75.3	68.2	110.3
	H6	Priv	Anaesthetic Start to Op End	69	68.8	56.8	121.1
	H8	Priv	Patient in Theatre to Drapes Removed	241	81.0	71.6	113.2
	H9A	Priv	Inpatient in A. Bay to Surgery Finish	102	98.4	98.5	100.0
	H9B	Day	Day Surgery, Anaesthetist Start to Surgery Finish	62	58.3	53.0	110.0
	H10	Priv	Anaesthetic Start to Op End	45	81.7	64.4	126.9
	H13	Priv	Anaesthetic Start to Surgeon End	72	66.9	60.2	111.2
	H15	Priv	Anaesthetic Start to Op End	180	89.0	75.3	118.1
	H16	Pub	Anaesthetic Start to Proc End	238	86.5	92.4	93.6
	H17	Pub	Anaesthetic Start to Surgical End	275	90.9	103.2	88.0
	H18	Priv	Anaesthetic Start to Proc End	258	89.3	82.7	108.0
	H19	Pub	Anaesthetic Start to Dressings Applied	181	95.4	107.4	88.8
H20	Pub	Anaesthetist Start to End Dressings	207	80.1	88.3	90.7	
CANS	Pub & Priv	Anaesthetist Start to Operation Finish	250	93.1	79.5	117.1	
Deloitte	Pub & Priv	Anaesthetic Time	121	76.6	66.5	115.2	
ANAESTHETIC TIME 2 (OAT 2)	H8	Priv	Patient in Theatre to Xfer from OR	242	81.0	76.3	106.2
	H11	Priv	Anaesthetic Start to Xfer to Recovery	153	77.8	101.0	77.1
	H12	Pub	Anaesthetic Start to Xfer to Recovery	21	51.9	54.4	95.4
	H13	Priv	Anaesthetic Start to Xfer from OR	74	69.6	71.0	98.0
	H14	Pub	Anaesthetic Start to Recovery Admission	305	91.2	100.0	91.1
	H15	Priv	Anaesthetic Start to Recovery Admission	185	89.0	82.0	108.5
	H16	Pub	Anaesthetic Start to Recovery Admission	241	85.0	97.0	87.6
	H17	Pub	Anaesthetic Start to Xfer from OR	277	90.5	111.3	81.3
	H18	Priv	Anaesthetic Start to Xfer from OR	262	89.4	89.4	100.0
	H19	Pub	Anaesthetic Start to Ex Theatre	233	92.4	111.9	82.6
	H20	Pub	Anaesthetist Start to Admit Recovery/ICU	209	81.1	98.1	82.7
	CANS	Pub & Priv	Anaesthetist Start to Anaesthetist Finish	250	93.1	85.0	109.5
TIME IN THEATRE (THT)	H2	Priv	Total Time in Theatre	161	80.2	71.6	111.9
	H3	Priv	Total Time in Theatre	6	59.2	51.7	114.5
	H7	Day	Total Time in Theatre	81	65.0	46.4	140.0
	H11	Priv	Dress, scrub etc. to Xfer to Recovery	153	77.6	118.3	65.5
	H15	Priv	Theatre Reception to Recovery Admission	185	88.8	102.9	86.3
	H19	Pub	In Op Suite to Ex Theatre	234	90.8	128.7	70.5
	C'mix Pub	Pub	Casemix Public Theatre Time	127	55.8	36.6	152.5
	C'mix Priv	Priv	Casemix Private Theatre Time	251	65.8	43.5	151.4
	C'mix Other	Day & Other	Casemix Other Theatre Time	42	53.2	37.4	142.2
	WA	Priv	WA Group Total Time in Theatre	429	97.3	81.2	119.8

\* Median ratio of ORTH intra time estimates to OPT (excluding H4, H6, H9A, H9B and H11)  
Unweighted = 137.3 %  
Weighted (for number of items in common) = 128.1 %

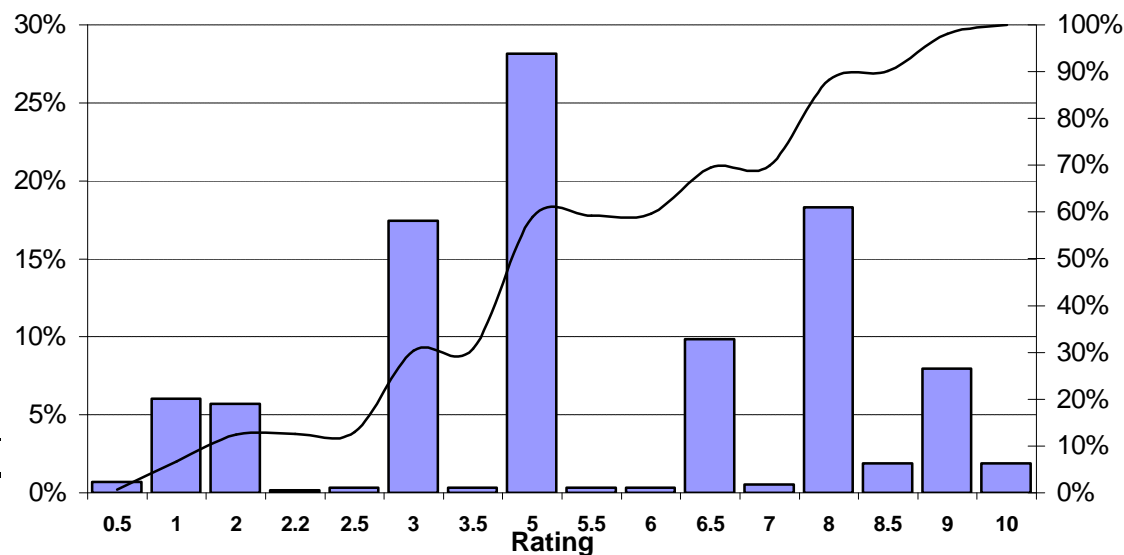
## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Freq.	Percentage	Cum. Percentage
0.5	4	0.7%	0.7%
1	35	6.0%	6.7%
2	33	5.7%	12.4%
2.2	1	0.2%	12.6%
2.5	2	0.3%	13.0%
3	101	17.4%	30.4%
3.5	2	0.3%	30.7%
5	163	28.2%	58.9%
5.5	2	0.3%	59.2%
6	2	0.3%	59.6%
6.5	57	9.8%	69.4%
7	3	0.5%	69.9%
8	106	18.3%	88.3%
8.5	11	1.9%	90.2%
9	46	7.9%	98.1%
10	11	1.9%	100.0%
<b>Total</b>	<b>579</b>	<b>100.0%</b>	

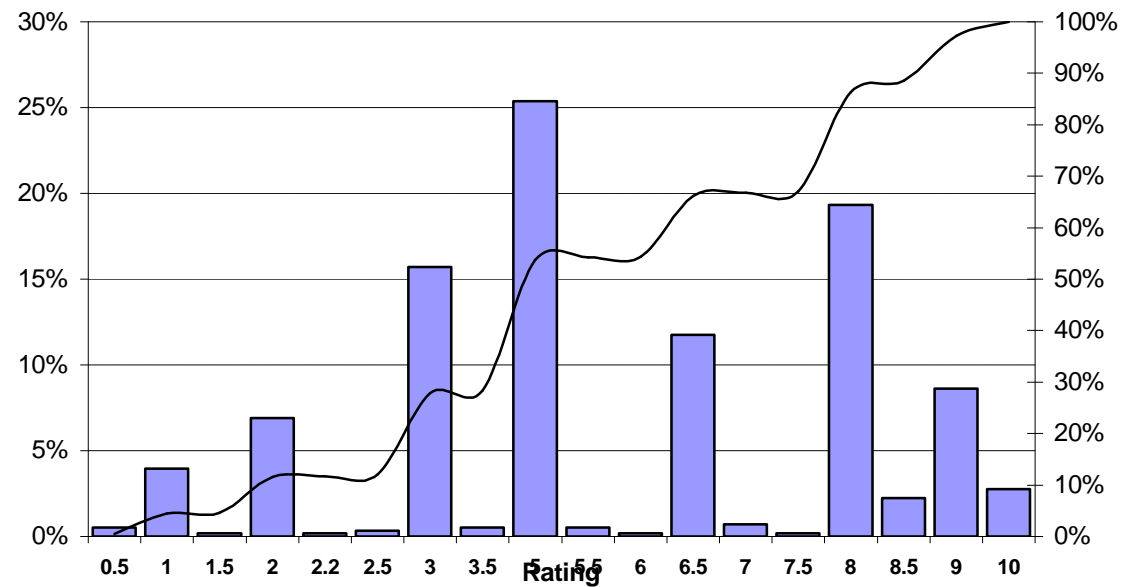
Number of missing values = 0



## Attachment 3 - Continued

### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum. Percentage
0.5	3	0.5%	0.5%
1	23	4.0%	4.5%
1.5	1	0.2%	4.7%
2	40	6.9%	11.6%
2.2	1	0.2%	11.7%
2.5	2	0.3%	12.1%
3	91	15.7%	27.8%
3.5	3	0.5%	28.3%
5	147	25.4%	53.7%
5.5	3	0.5%	54.2%
6	1	0.2%	54.4%
6.5	68	11.7%	66.1%
7	4	0.7%	66.8%
7.5	1	0.2%	67.0%
8	112	19.3%	86.4%
8.5	13	2.2%	88.6%
9	50	8.6%	97.2%
10	16	2.8%	100.0%
<b>Total</b>	<b>579</b>	<b>100.0%</b>	



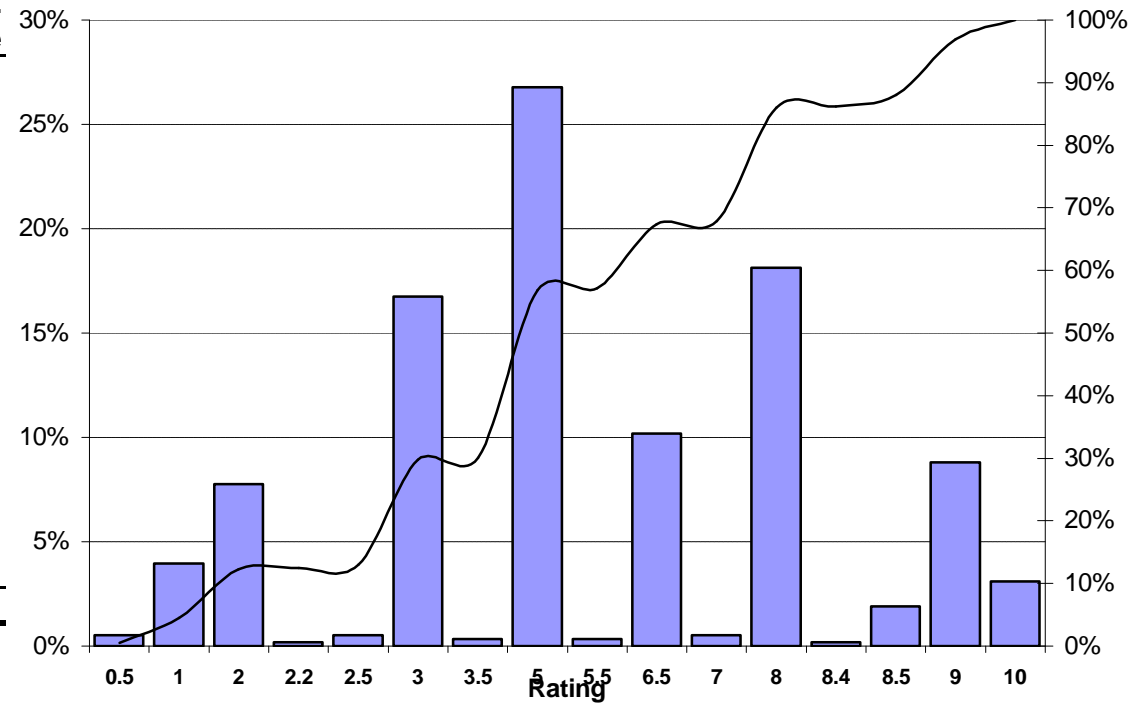
Number of missing values = 0

## Attachment 3 - Continued

### Summary Report for Stress

Rating	Freq.	Percentage	Cum. Percentage
0.5	3	0.5%	0.5%
1	23	4.0%	4.5%
2	45	7.8%	12.3%
2.2	1	0.2%	12.4%
2.5	3	0.5%	13.0%
3	97	16.8%	29.7%
3.5	2	0.3%	30.1%
5	155	26.8%	56.8%
5.5	2	0.3%	57.2%
6.5	59	10.2%	67.4%
7	3	0.5%	67.9%
8	105	18.1%	86.0%
8.4	1	0.2%	86.2%
8.5	11	1.9%	88.1%
9	51	8.8%	96.9%
10	18	3.1%	100.0%
<b>Total</b>	<b>579</b>	<b>100.0%</b>	

Number of missing values = 0



## Attachment 4 - Links with Other Specialties

The number of link items between Orthopaedic Surgery and the other Consensus Groups is set out below.

**Number of Links with Other Specialties**

<b>Specialty</b>	<b>Procedure Items</b>	<b>Consultation Items</b>	<b>Total Items</b>
<b>Gen. Prac. &amp; Emergency Med.</b>	29	0	29
<b>Oral and Maxillo-Facial Surgery</b>	0	16	16
<b>Obstetrics / Gynaecology</b>	0	0	0
<b>General Surgery</b>	3	0	3
<b>Cardio Thoracic Surgery</b>	0	0	0
<b>Neurosurgery</b>	25	23	48
<b>Paediatric Surgery</b>	0	0	0
<b>Plastic Surgery</b>	64	11	75
<b>Urology</b>	0	0	0
<b>Vascular Surgery</b>	2	0	2
<b>Ophthalmology</b>	0	0	0
<b>ENT</b>	0	0	0
<b>Anaesthesia</b>	0	65	65
<b>Dermatology</b>	0	0	0
<b>Paediatric / Thoracic Medicine</b>	0	63	63
<b>General Medicine</b>	1	46	
<b>Cardiology, Renal, ICU</b>	0	0	0
<b>Radiation, Oncology</b>	0	0	0
<b>Gastroenterology</b>	0	0	0
<b>Neurology</b>	0	65	65
<b>Haematology, Medical Oncology</b>	0	0	0
<b>Psychiatry</b>	0	54	54
<b>Total</b>	121	65	85

## Glossary

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Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: a) being a good map b) having as high a frequency as possible c) being well spread in terms of their rank.
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.



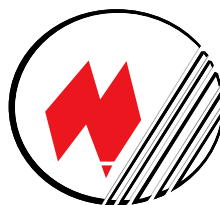
**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**Paediatric Surgery  
Summary Status Report**

**October 25, 1999**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

---

This document outlines the results of an examination of the information sent to the NCCH by the Paediatric Surgery Consensus Group.

The Paediatric Surgery Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 136 items. These comprised 120 procedure items and 16 consultation items.

Analysis of this information showed:

- The median ratio of Paediatric Surgery's intra time estimates to NCCH's Theatre Times Database observed procedure times was 118.3%. This implies a tendency to over estimate intra times,
- The group gave very much higher ranks to the procedure items than to the consultation items and very much lower ranks to link items than to non-link items ( $p < 0.001$ ).
- The ranking of potential core items does not show statistical bias.
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 4.8. This is slightly higher than the median observed for specialties so far examined. However, in terms of deviations in rates of pay, it should still be possible to align Paediatric Surgery's rankings and ratings with those of the other groups.
- Procedure items were given very much higher imputed relative<sup>1</sup> values than consultation items ( $p < 0.001$ ).
- Link items were given very much lower imputed relative values than non link items ( $p < 0.001$ ). There was no significant difference between the imputed relative values given to good map items and those given to poor/no-map items.
- The correlation between the imputed relative values for Paediatric Surgery with schedule fee was strong ( $R^2 = 86\%$ ). CPT RV is well correlated with IRV ( $R^2 = 74\%$ ).

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for Paediatric Surgery are set out in Table 2.1 together with associated standard deviations and ranges.

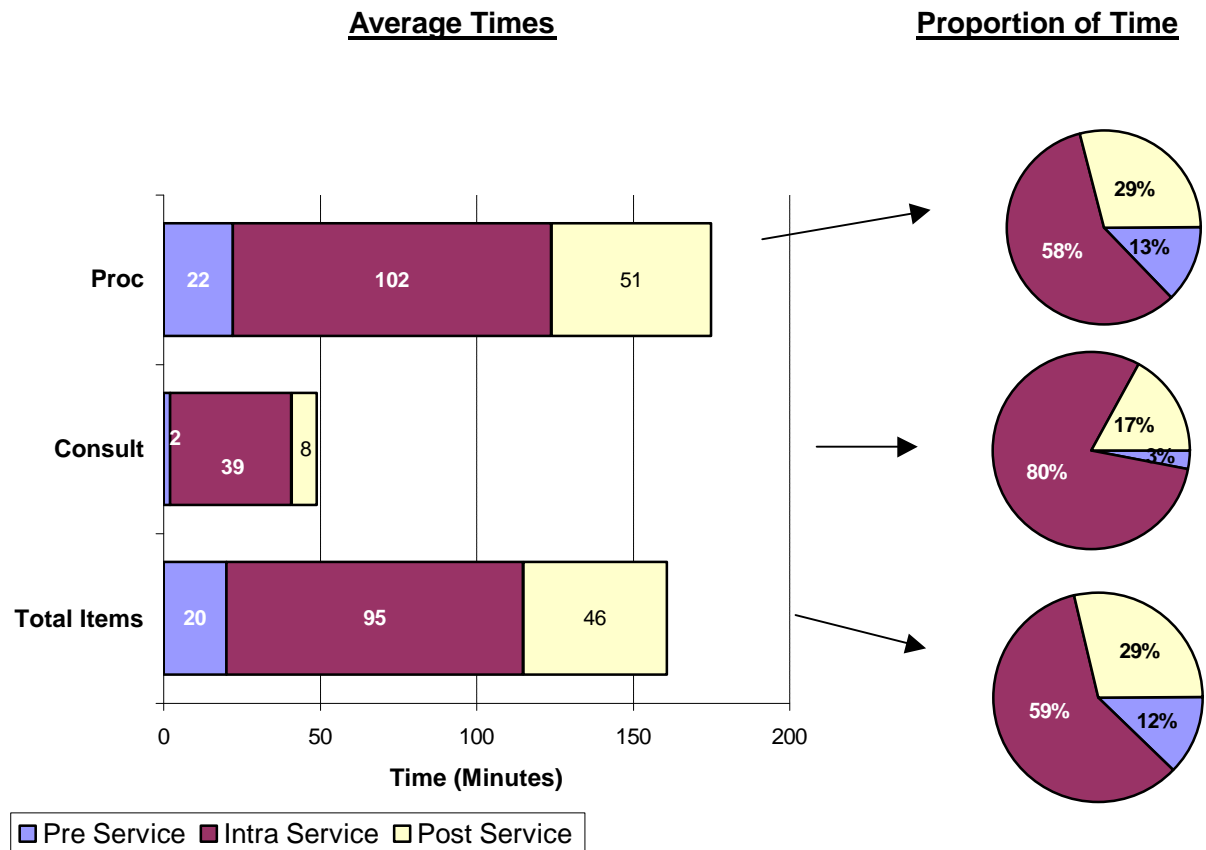
The mean intra service time was 95 minutes and the mean total time was 160 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
<b>Mean</b>	19.7	94.7	45.6	160.0
<b>SD</b>	12	70	37	111
<b>Min</b>	0	5	0	5
<b>Max</b>	60	360	160	525

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for procedure items, consultation items and all items.

**Figure 2.1**



A summary breakdown is also provided in Table 2.2.

**Table 2.2**

<b>Average Times</b>	<b>Pre Service</b>	<b>Intra Service</b>	<b>Post Service</b>	<b>Total Time</b>
<b>Procedure Items</b>	22.2	102.1	50.6	174.9
<b>Consultation Items</b>	1.5	38.7	8.3	48.5
<b>Total Items</b>	19.7	94.7	45.6	160.0

Paediatric Surgery's intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies.

The median ratio of Paediatric Surgery's intra time estimates to the observed procedure times was 118.3%. This implies a tendency by this Consensus Group to over estimate their intra times. A more detailed analysis is provided in Attachment 2.

## Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for Paediatric Surgery are set out in Table 3.1 together with associated standard deviations and ranges.

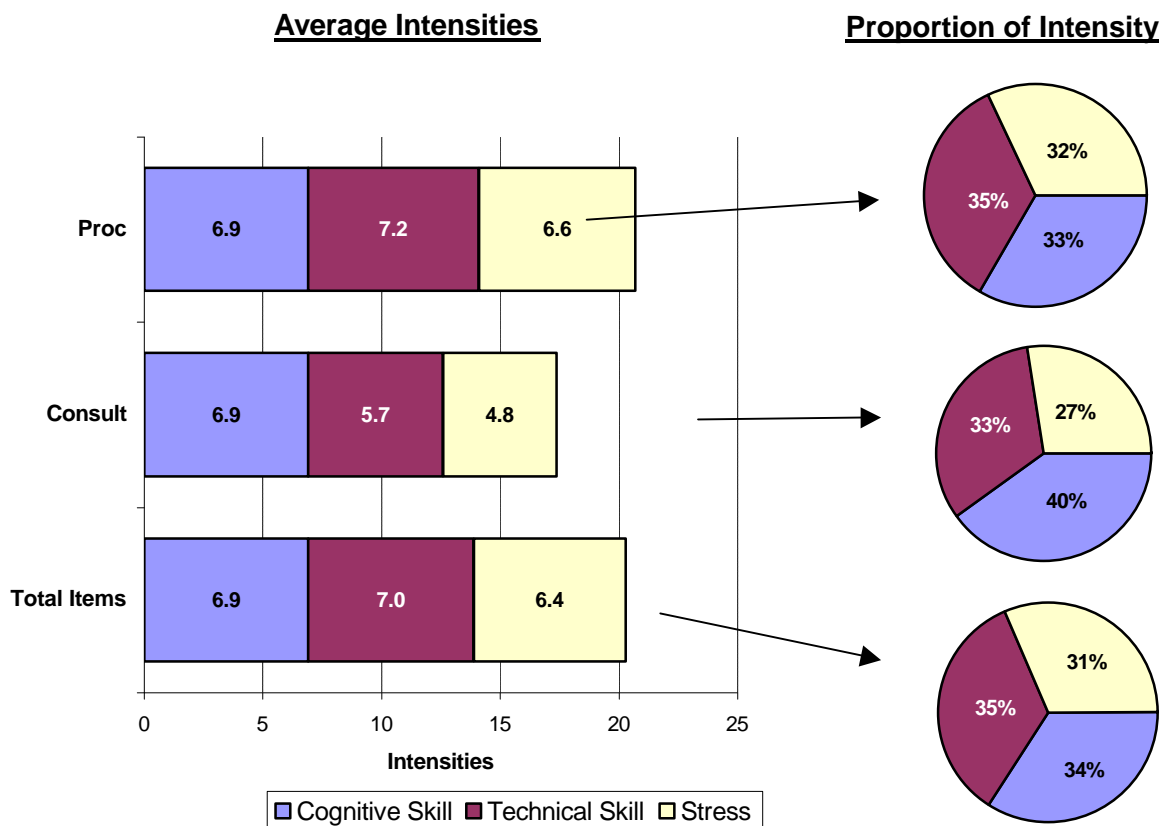
The mean ratings for cognitive skill was 6.9, for technical skill 7.0 and 6.4 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
<b>Mean</b>	6.9	7.0	6.4	20.3
<b>SD</b>	1.8	2.1	2.4	6.0
<b>Min</b>	1.0	1.0	0.5	2.5
<b>Max</b>	10.0	10.0	10.0	29.5

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. They are provided for procedure items, consultation items and all items.

**Figure 3.1**



A summary breakdown is also provided in Table 3.2.

**Table 3.2**

<b>Intensity Ratings</b>	<b>Cognitive Skill</b>	<b>Technical Skill</b>	<b>Stress</b>	<b>Total Intensity</b>
<b>Procedure Items</b>	6.9	7.2	6.6	20.7
<b>Consultation Items</b>	6.9	5.7	4.8	17.4
<b>Total Items</b>	6.9	7.0	6.4	20.3

<sup>2</sup> Please note that intensity descriptions are abbreviations only.

- a) Cognitive Skill = Cognitive Skill, Clinical Judgement and Communication Skills
- b) Technical Skill = Technical Skill and Physical Effort
- c) Stress = Stress Due to Risk

## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (that is time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4.1. The procedure items were given very much higher ranks than consultation items (Sum of ranks test,  $p < 0.001$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
<b>Procedure</b>	120	1	136	63.1
<b>Consultation</b>	16	51	134	109.4
<b>Total</b>	136	1	136	68.5

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. The Paediatric Surgery Consensus Group assessed 47 link items. These comprised all 16 of their consultation items and 31 of the 120 procedure items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.2. The ranks given to link items were very much lower than those given to non-link items (Sum of ranks test,  $p < 0.001$ ).

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
<b>Consultation</b>	16	51	134	109.4
<b>Procedure-Link</b>	31	35	136	91.4
<b>Total Link</b>	47	35	136	97.5
<b>Non-Link (Procedure)</b>	89	1	135	53.2
<b>Total</b>	136	1	136	68.5



Good maps of Paediatric Surgery's items to CPT were available for 17 of their 136 items. A breakdown of the ranks given to these good map items and to the poor/non map items is set out in Table 4.3. The ranks given to the good map items were not significantly different from those given to the poor/non map items. This means that good map items (i.e. potential core items) are well spread throughout the ranks.

Table 4.3

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Good Map	17	7	122	63.6
Poor/Non Map	119	1	136	69.2
<b>Total</b>	136	1	136	68.5

## Section 5 Relative Value Implications

---

For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analyzed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for Paediatric Surgery is 1 to 282.

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the range in relative rates of pay is 1 to 4.0. Depending on both variations in intensity and on variations in the composition of times (different weightings for pre: intra: post), the range in relative rates of pay is 1 to 4.8.

These ranges in relative rates of pay are a little higher than the median observed for specialties examined so far<sup>3</sup>. However, in terms of deviations in rates of pay, it should still be possible to align Paediatric Surgery's rankings and ratings with those of the other groups.

<sup>3</sup> The median range in relative rates of pay depending on intensity alone is 1 to 3.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.5.

Comparisons between consultation and procedure items, between link items and non link items and between Good Map Items and Poor/No Map Items in terms of imputed relative value (IRV) are set out in Table 5.1.

The procedure items were given very much higher imputed relative values than the consultation items (t tests,  $p < 0.001$ ), while link items were given very much lower imputed relative values than non-link items (t tests,  $p < 0.001$ ). There was no significant difference between the imputed relative values given to good map items and those given to poor/no-map items.

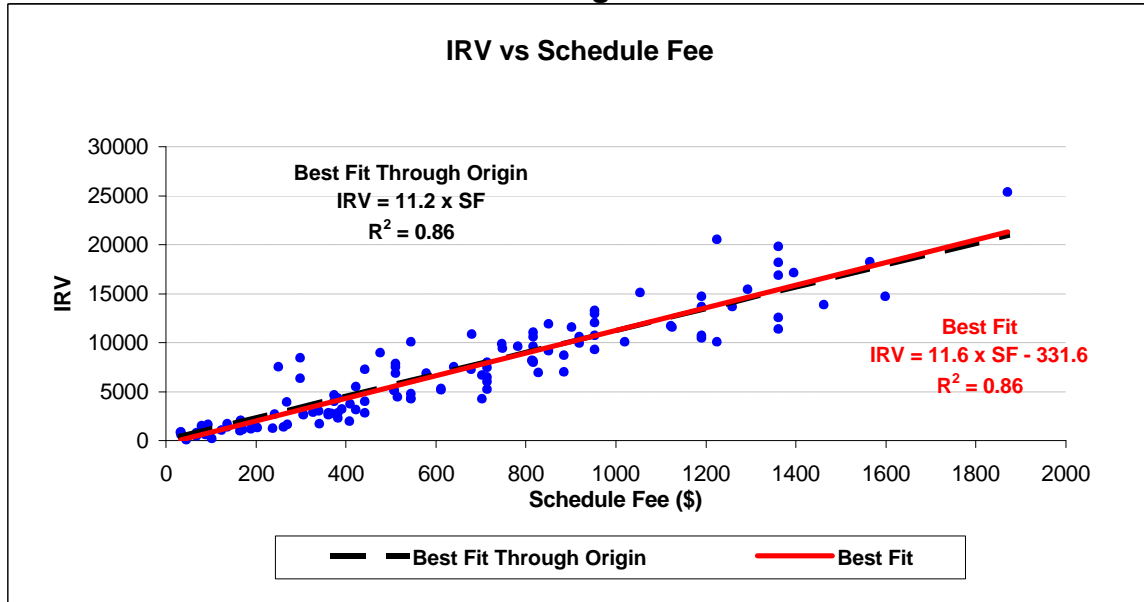
**Table 5.1**

Type of Item	Number Reviewed	IRVs			
		Mean	$\pm$	SD	Low High
<b>Consultation</b>	16	1760	$\pm$	1714	378.0 7507.5
<b>Procedure</b>	120	6891	$\pm$	5215	90.0 25380.0
<b>Link</b>	47	2751	$\pm$	2465	90.0 9900.0
<b>Non-link</b>	89	8154	$\pm$	5303	202.5 25380.0
<b>Good Map</b>	17	6151	$\pm$	3942	866.3 16862.5
<b>Poor/No Map</b>	119	6307	$\pm$	5370	90.0 25380.0
<b>Total</b>	136	6287	$\pm$	5201	90.0 25380.0

A plot of Paediatric Surgery's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is excellent ( $R^2 = 0.86$ )<sup>4</sup> and is consistent with a straight line relationship through the origin.

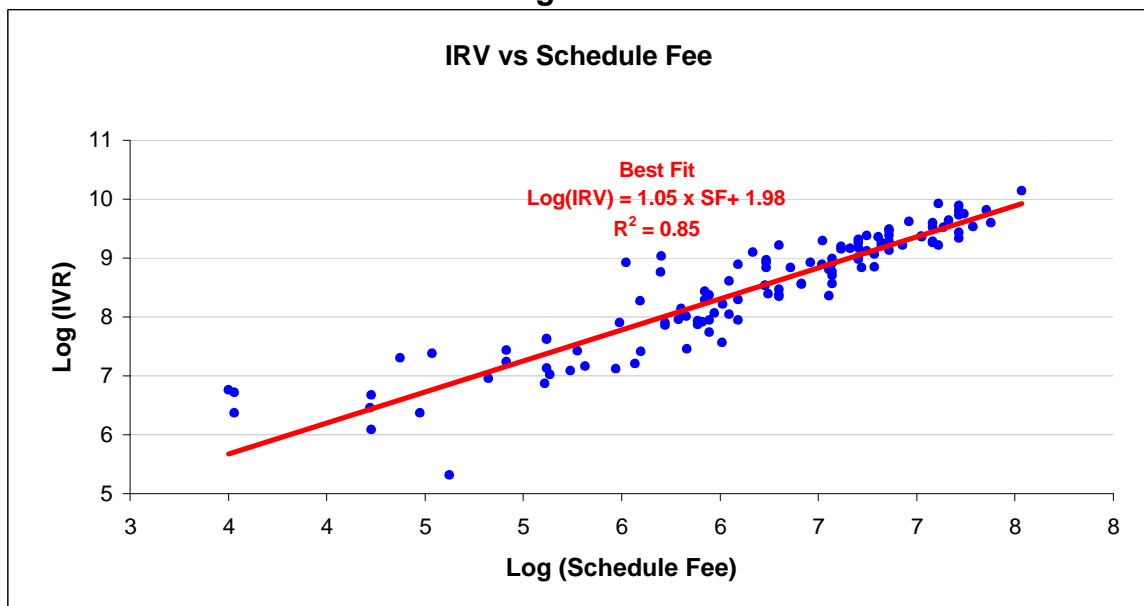
<sup>4</sup> An  $R^2$  value of 0.86 means that the line explains 86% of the variation.

Figure 5.1



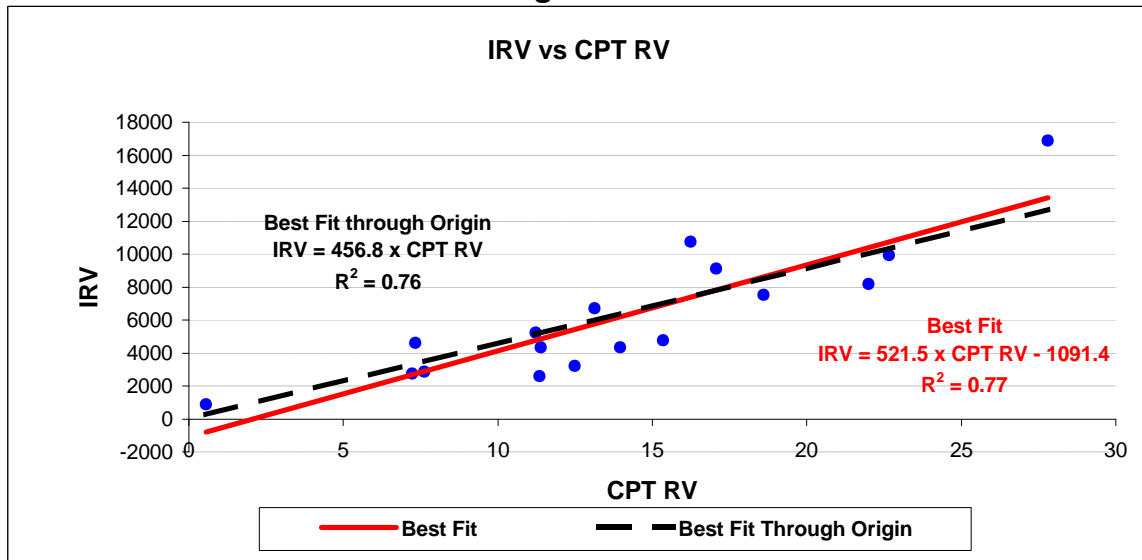
We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit explains 85% of the variation as against 86% previously.

Figure 5.2



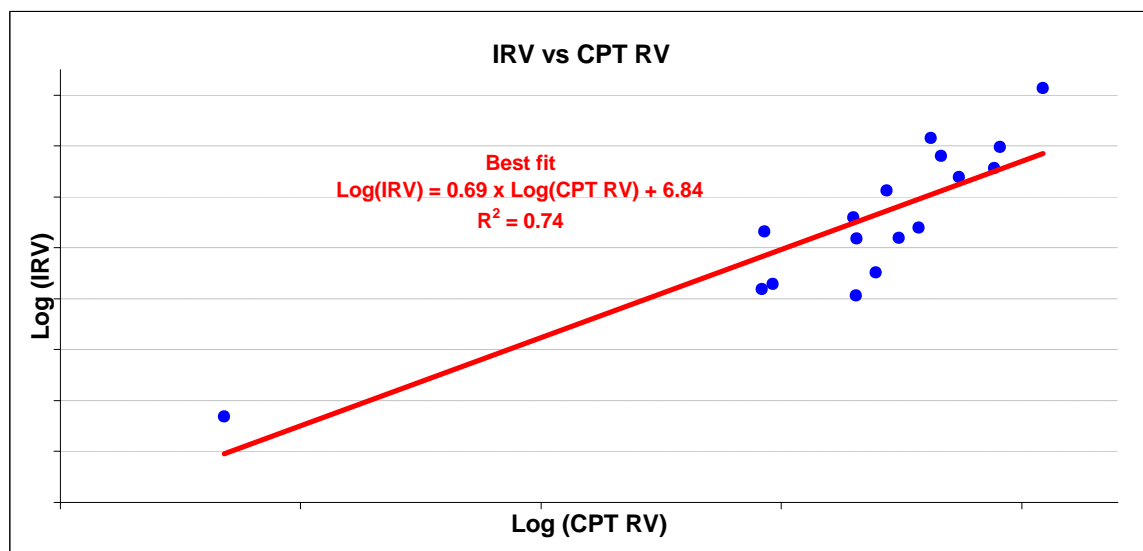
A plot of Paediatric Surgery's IRVs against CPT RV is set out in Figure 5.3. The fit is good ( $R^2 = 0.77$ ) and the results are consistent with a simple proportional relationship between the scales.

Figure 5.3



As for Schedule Fee, we might expect the magnitude of error deviation to increase with CPT RV. Accordingly, a log/log plot is also provided (Figure 5.4). The transformation does not improve the fit, explaining 74% of the variation as against 77% previously.

Figure 5.4

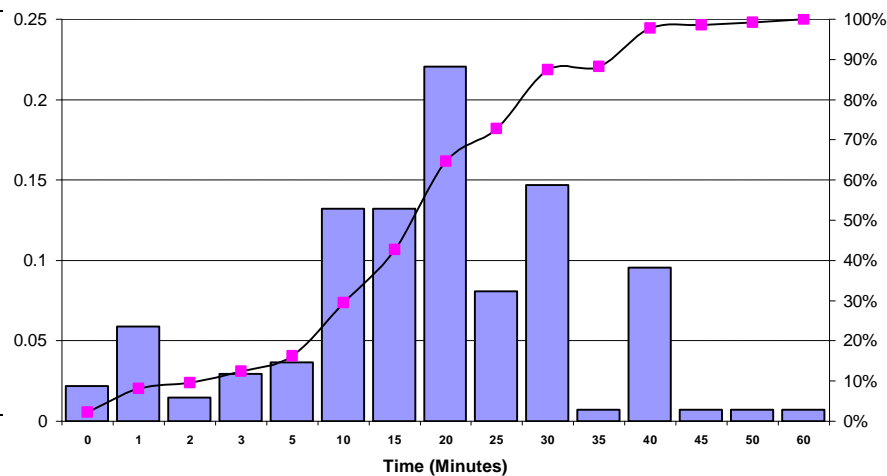


## Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Pre-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	3	2.2%	2.2%
1	8	5.9%	8.1%
2	2	1.5%	9.6%
3	4	2.9%	12.5%
5	5	3.7%	16.2%
10	18	13.2%	29.4%
15	18	13.2%	42.6%
20	30	22.1%	64.7%
25	11	8.1%	72.8%
30	20	14.7%	87.5%
35	1	0.7%	88.2%
40	13	9.6%	97.8%
45	1	0.7%	98.5%
50	1	0.7%	99.3%
60	1	0.7%	100.0%
<b>Total</b>	<b>136</b>	<b>100.0%</b>	

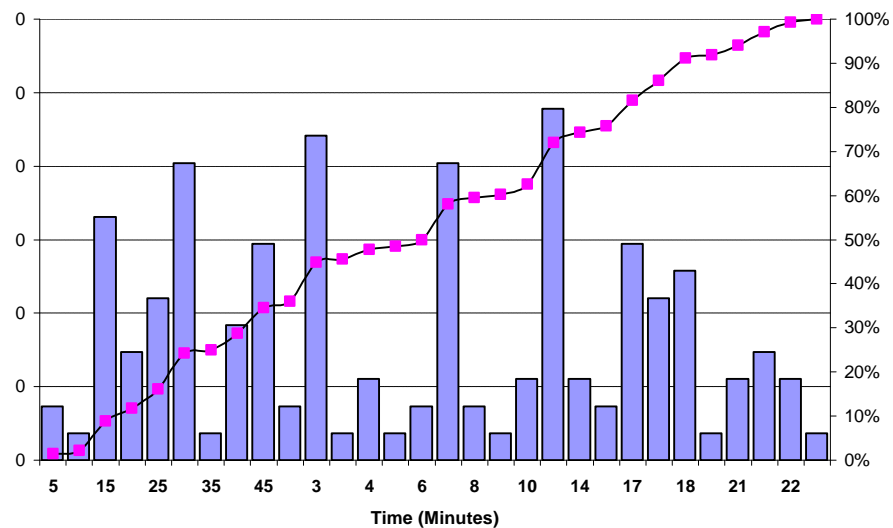


Number of missing values = 0

## Attachment 1 - Continued

### Summary Report for Intra-Service Time

Time	Freq.	Percentage	Cum. Percentage
5	2	1.5%	1.5%
10	1	0.7%	2.2%
15	9	6.6%	8.8%
20	4	2.9%	11.8%
25	6	4.4%	16.2%
30	11	8.1%	24.3%
35	1	0.7%	25.0%
40	5	3.7%	28.7%
45	8	5.9%	34.6%
50	2	1.5%	36.0%
3	12	8.8%	44.9%
65	1	0.7%	45.6%
4	3	2.2%	47.8%
75	1	0.7%	48.5%
6	2	1.5%	50.0%
90	11	8.1%	58.1%
8	2	1.5%	59.6%
105	1	0.7%	60.3%
10	3	2.2%	62.5%
120	13	9.6%	72.1%
14	3	2.2%	74.3%
140	2	1.5%	75.7%
17	8	5.9%	81.6%
160	6	4.4%	86.0%
18	7	5.1%	91.2%
200	1	0.7%	91.9%
21	3	2.2%	94.1%
240	4	2.9%	97.1%
22	3	2.2%	99.3%
360	1	0.7%	100.0%
Total	136	100.0%	

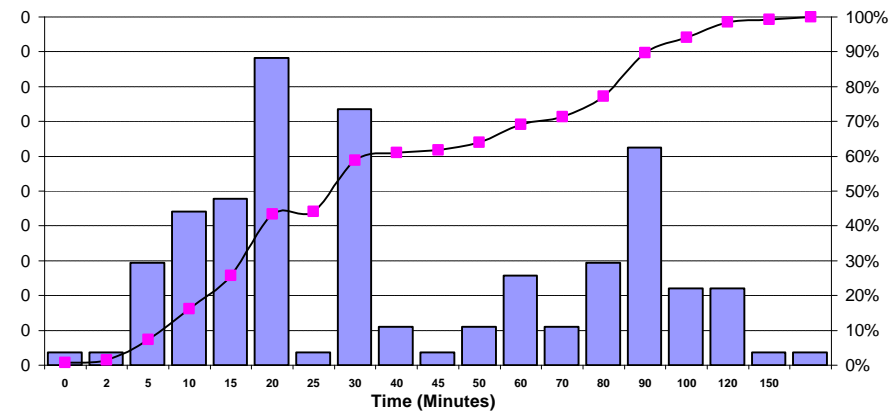


Number of missing values = 0

## Attachment 1 - Continued

### Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	1	0.7%	0.7%
2	1	0.7%	1.5%
5	8	5.9%	7.4%
10	12	8.8%	16.2%
15	13	9.6%	25.7%
20	24	17.6%	43.4%
25	1	0.7%	44.1%
30	20	14.7%	58.8%
40	3	2.2%	61.0%
45	1	0.7%	61.8%
50	3	2.2%	64.0%
60	7	5.1%	69.1%
70	3	2.2%	71.3%
80	8	5.9%	77.2%
90	17	12.5%	89.7%
100	6	4.4%	94.1%
120	6	4.4%	98.5%
150	1	0.7%	99.3%
160	1	0.7%	100.0%
Total	136	100.0%	



Number of missing values = 0



Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x PAED/OTE
	ID	Type	Definition of Time		PAED	OTE	
OPERATION TIME (OPT) *	H1	Priv	Op Start to Op End	4	50.0	31.7	157.9
	H4	Priv	Op Start to Op End	9	37.2	30.8	120.8
	H6	Priv	Op Start to Op End	13	37.7	28.5	132.3
	H8	Priv	Surgeon Start to Drapes Removed	29	48.6	34.6	140.6
	H9A	Priv	Inpatient, Surgery Start to Surgery Finish	11	67.7	89.2	76.0
	H9B	Day	Day Surgery, Surgery Start to Surgery Finish	5	22.0	35.4	62.1
	H10	Priv	Op Start to Op End	3	30.0	29.0	103.5
	H11	Priv	Knife to Skin - Application of Dressing	11	44.1	62.6	70.4
	H13	Priv	Surgeon Start to Surgeon Finish	8	33.1	26.5	125.1
	H15	Priv	Op Start to Op End	11	40.9	34.6	118.3
	H16	Pub	Proc Start to Proc End	20	69.0	59.7	115.5
	H17	Pub	Surgical Start to Surgical End	21	64.1	77.9	82.2
	H18	Priv	Proc Start to Proc End	21	52.9	46.5	113.7
	H19	Pub	Positioning to Dressings Applied	51	94.7	66.1	143.2
	H20	Pub	Preparation/Positioning to End Dressings	27	43.7	33.2	131.7
	APHA	Priv	Procedure Time	16	52.2	52.5	99.4
	CANS	Pub & Priv	Op Start to Op Finish	23	43.7	57.9	75.5
Deloitte	Pub & Priv	Procedure Time	7	25.7	26.6	96.8	
OPERATION TIME 2 (OPT 2)	H8	Priv	Surgeon Start to Xfer from OR	31	46.5	36.3	128.1
	H13	Priv	Surgeon Start to Xfer from OR	8	33.1	32.0	103.6
	H15	Priv	Op Start to Recovery Admission	11	40.0	37.0	108.1
	H16	Pub	Proc Start to Recovery Admission	21	66.9	66.0	101.4
	H17	Pub	Surgical Start to Xfer from OR	23	64.4	83.2	77.4
	H18	Priv	Proc Start to Xfer from OR	21	52.9	51.6	102.5
	H19	Pub	Positioning to Ex Theatre	69	93.8	76.0	123.5
	H20	Pub	Preparation/Positioning to Admit Recovery/ICU	27	42.4	38.1	111.3
CANS	Pub & Priv	Operation Start to Anaesthetist Finish	22	43.6	61.6	70.8	
ANAESTHETIC TIME (OAT)	MBS	Pub & Priv	Anaesthetic Time	119	102.9	120.9	85.2
	H1	Priv	Anaesthetic Start to Op End	6	40.8	41.2	99.1
	H4	Priv	Anaesthetic Start to Op End	10	42.5	66.0	64.4
	H5	Priv	Anaesthetic Start to Surgery End	6	46.7	63.7	73.3
	H6	Priv	Anaesthetic Start to Op End	14	39.3	44.9	87.5
	H8	Priv	Patient in Theatre to Drapes Removed	30	46.3	42.7	108.6
	H9A	Priv	Inpatient in A. Bay to Surgery Finish	11	67.7	102.1	66.4
	H9B	Day	Day Surgery, Anaesthetist Start to Surgery Finish	5	22.0	46.0	47.8
	H10	Priv	Anaesthetic Start to Op End	3	30.0	38.8	77.2
	H13	Priv	Anaesthetic Start to Surgeon End	8	33.1	37.6	88.1
	H15	Priv	Anaesthetic Start to Op End	11	40.9	43.4	94.2
	H16	Pub	Anaesthetic Start to Proc End	22	65.2	70.5	92.5
	H17	Pub	Anaesthetic Start to Surgical End	24	64.2	100.1	64.1
	H18	Priv	Anaesthetic Start to Proc End	21	52.9	57.6	91.9
	H19	Pub	Anaesthetic Start to Dressings Applied	54	90.9	86.0	105.8
H20	Pub	Anaesthetist Start to End Dressings	28	41.3	42.5	97.1	
CANS	Pub & Priv	Anaesthetist Start to Operation Finish	23	43.7	64.2	68.0	
Deloitte	Pub & Priv	Anaesthetic Time	7	25.7	31.9	80.7	
ANAESTHETIC TIME 2 (OAT 2)	H8	Priv	Patient in Theatre to Xfer from OR	30	46.3	46.2	100.3
	H11	Priv	Anaesthetic Start to Xfer to Recovery	11	44.1	82.6	53.4
	H12	Pub	Anaesthetic Start to Xfer to Recovery	9	34.4	49.6	69.5
	H13	Priv	Anaesthetic Start to Xfer from OR	8	33.1	43.1	76.8
	H14	Pub	Anaesthetic Start to Recovery Admission	28	50.5	73.6	68.7
	H15	Priv	Anaesthetic Start to Recovery Admission	12	37.9	42.4	89.4
	H16	Pub	Anaesthetic Start to Recovery Admission	22	65.2	78.9	82.7
	H17	Pub	Anaesthetic Start to Xfer from OR	24	64.2	107.2	59.9
	H18	Priv	Anaesthetic Start to Xfer from OR	22	51.4	62.1	82.7
	H19	Pub	Anaesthetic Start to Ex Theatre	70	92.6	97.0	95.5
	H20	Pub	Anaesthetist Start to Admit Recovery/ICU	28	41.3	50.0	82.5
	CANS	Pub & Priv	Anaesthetist Start to Anaesthetist Finish	23	43.7	69.8	62.6
	TIME IN THEATRE (THT)	H2	Priv	Total Time in Theatre	18	38.1	39.2
H3		Priv	Total Time in Theatre	2	30.0	36.5	82.2
H7		Day	Total Time in Theatre	5	43.0	33.4	128.6
H11		Priv	Dress, scrub etc. to Xfer to Recovery	11	44.1	99.3	44.4
H15		Priv	Theatre Reception to Recovery Admission	12	37.9	53.0	71.5
H19		Pub	In Op Suite to Ex Theatre	70	92.6	111.9	82.8
C'mix Pub		Pub	Casemix Public Theatre Time	33	42.3	32.3	131.1
C'mix Priv		Priv	Casemix Private Theatre Time	41	46.6	37.3	124.9
C'mix Other		Day & Other	Casemix Other Theatre Time	9	29.4	27.2	108.1
WA		Priv	WA Group Total Time in Theatre	53	62.9	61.1	102.9

\* Median ratio of PAED intra time estimates to OPT (excluding H4, H6, H9A, H9B and H11)  
 Unweighted = 115.5 %  
 Weighted (for number of items in common) = 118.3 %

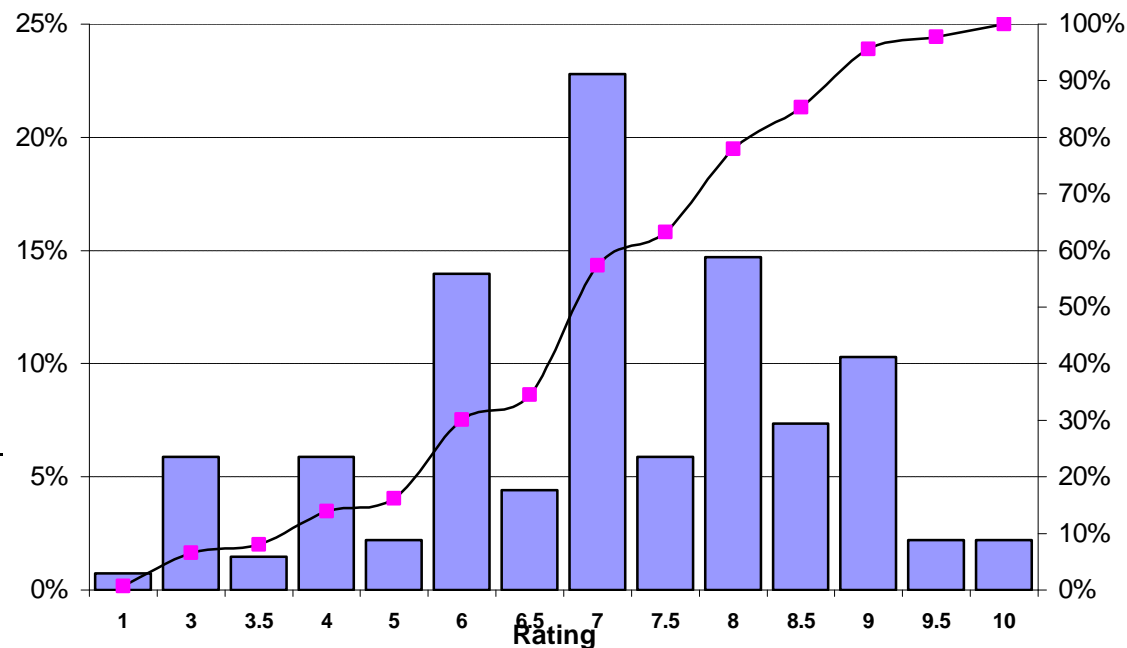
## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1	1	0.7%	0.7%
3	8	5.9%	6.6%
3.5	2	1.5%	8.1%
4	8	5.9%	14.0%
5	3	2.2%	16.2%
6	19	14.0%	30.1%
6.5	6	4.4%	34.6%
7	31	22.8%	57.4%
7.5	8	5.9%	63.2%
8	20	14.7%	77.9%
8.5	10	7.4%	85.3%
9	14	10.3%	95.6%
9.5	3	2.2%	97.8%
10	3	2.2%	100.0%
Total	136	100.0%	

Number of missing values = 0

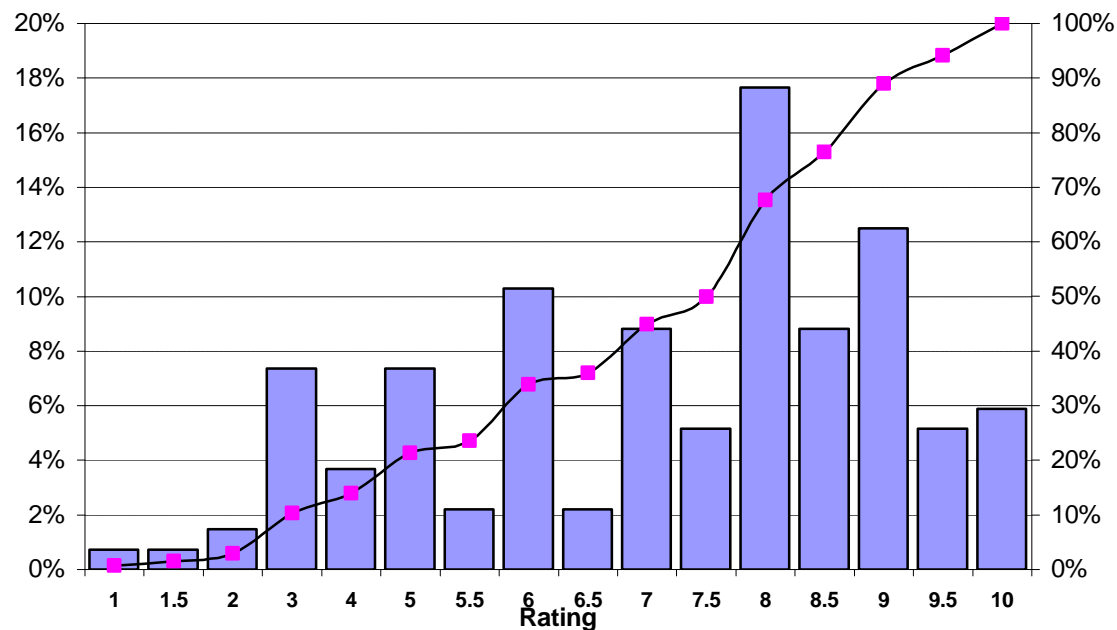


## Attachment 3 - Continued

### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1	1	0.7%	0.7%
1.5	1	0.7%	1.5%
2	2	1.5%	2.9%
3	10	7.4%	10.3%
4	5	3.7%	14.0%
5	10	7.4%	21.3%
5.5	3	2.2%	23.5%
6	14	10.3%	33.8%
6.5	3	2.2%	36.0%
7	12	8.8%	44.9%
7.5	7	5.1%	50.0%
8	24	17.6%	67.6%
8.5	12	8.8%	76.5%
9	17	12.5%	89.0%
9.5	7	5.1%	94.1%
10	8	5.9%	100.0%
Total	136	100.0%	

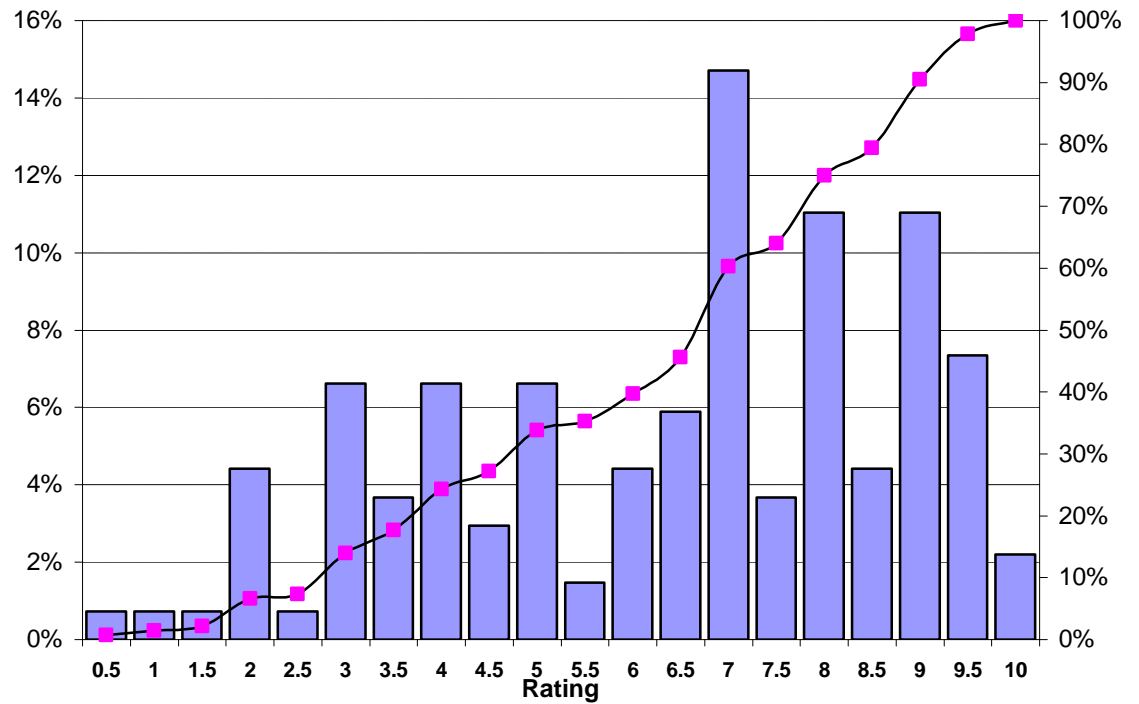
Number of missing values = 0



## Attachment 3 - Continued

### Summary Report for Stress

Rating	Freq.	Percentage	Cum. Percentage
0.5	1	0.7%	0.7%
1	1	0.7%	1.5%
1.5	1	0.7%	2.2%
2	6	4.4%	6.6%
2.5	1	0.7%	7.4%
3	9	6.6%	14.0%
3.5	5	3.7%	17.6%
4	9	6.6%	24.3%
4.5	4	2.9%	27.2%
5	9	6.6%	33.8%
5.5	2	1.5%	35.3%
6	6	4.4%	39.7%
6.5	8	5.9%	45.6%
7	20	14.7%	60.3%
7.5	5	3.7%	64.0%
8	15	11.0%	75.0%
8.5	6	4.4%	79.4%
9	15	11.0%	90.4%
9.5	10	7.4%	97.8%
10	3	2.2%	100.0%
Total	136	100.0%	



Number of missing values = 0

## Attachment 4 - Links with Other Specialties

---

The number of link items between Paediatric Surgery and the other Consensus Groups is set out below.

**Number of Links with Other Specialties**

<b>Specialty</b>	<b>Procedure Items</b>	<b>Consultation Items</b>	<b>Total Items</b>
Gen. Prac. & Emergency Med.	1	0	1
Oral and Maxillo-facial Surgery	0	13	13
Obstetrics / Gynaecology	0	0	0
General Surgery	5	15	20
Cardio Thoracic Surgery	0	0	0
Neurosurgery	1	14	15
Orthopaedic surgery	0	15	15
Plastic Surgery	5	0	5
Urology	16	0	16
Vascular Surgery	0	0	0
Ophthalmology	0	0	0
ENT	2	2	4
Anaesthesia	1	15	16
Dermatology	0	5	5
Paediatric / Thoracic Medicine	1	15	16
General Medicine	0	12	12
Cardiology, Renal, ICU	1	0	1
Radiation, Oncology	0	15	15
Gastroenterology	0	15	15
Neurology	0	15	15
Haematology, Medical Oncology	0	0	0
Psychiatry	0	15	15
<b>Total</b>	<b>31</b>	<b>16</b>	<b>47</b>

## Glossary

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Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: a) being a good map b) having as high a frequency as possible c) being well spread in terms of their rank.
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.

**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**Plastic Surgery  
Summary Status Report**

**November 9, 1999**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

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This document outlines the results of an examination of the information sent to the NCCH by the Plastic Surgery Consensus Group.

The Plastic Surgery Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 332 items. These were all procedure items.

Analysis of this information showed:

- The median ratio of Plastic Surgery's intra time estimates to NCCH's Theatre Times Database observed procedure times was 140.7%. This implies a strong tendency to over estimate intra times,
- The link items were given very much lower ranks than the non-link items. (Sum of Ranks Test,  $p < 0.001$ ).
- There was no statistical bias in the ranking of potential core items.
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 4.5. This corresponds to the median value observed for the specialties examined so far. In terms of deviations in rates of pay, there shouldn't be any major difficulty in aligning Plastic Surgery's rankings and ratings with those of other groups.
- The imputed relative values given to link items were only significantly lower than those given to non-link items when log transformed data were tested (t test,  $p < 0.001$ ). There was no significant difference between the imputed relative values given to good map items and those given to poor/no map items.
- The correlation between the imputed relative values for Plastic Surgery and schedule fee was strong ( $R^2 = 82\%$ ). CPT RV was also well correlated with IRV ( $R^2 = 78\%$ ). There seems to be a simple proportional relationship between IRV and schedule fee and between IRV and CPT RV.

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for Plastic Surgery are set out in Table 2.1 together with associated standard deviations and ranges.

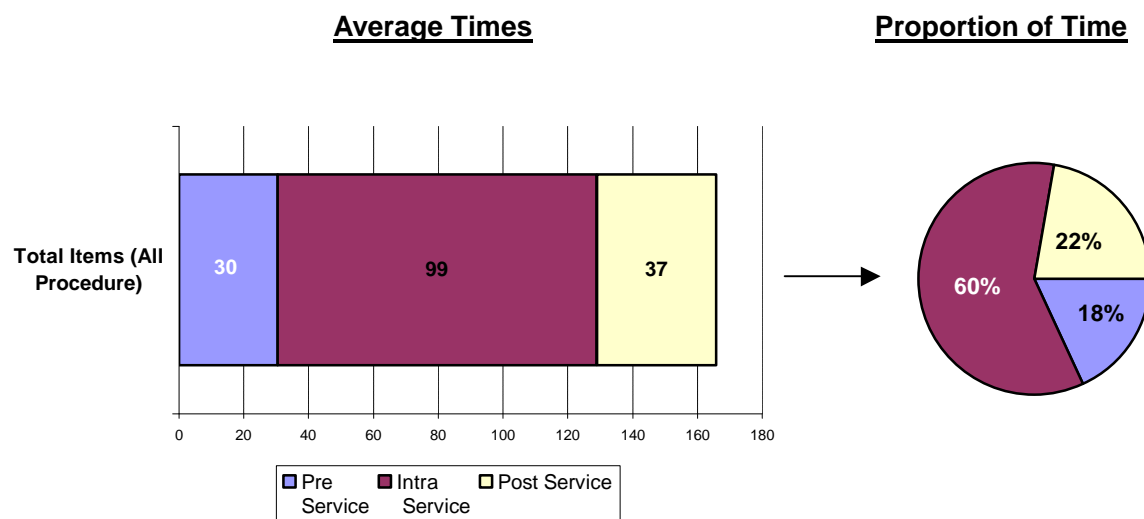
The mean intra service time was 99 minutes and the mean total time was 166 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
<b>Mean</b>	30	99	37	166
<b>SD</b>	8	80	11	93
<b>Min</b>	15	10	0	50
<b>Max</b>	60	470	95	575

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1.

**Figure 2.1**



Plastic Surgery's intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies.

The median ratio of Plastic Surgery's intra time estimates to the observed procedure times was 140.7%. This implies a strong tendency by this Consensus Group to over estimate their intra times. A more detailed analysis is provided in Attachment 2.

## Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for Plastic Surgery are set out in Table 3.1 together with associated standard deviations and ranges.

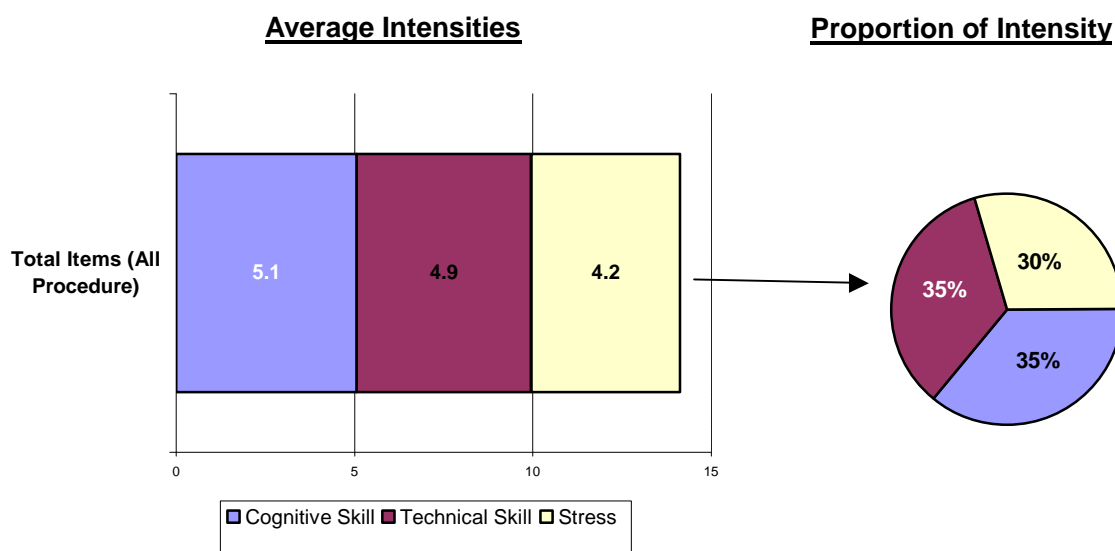
The mean ratings were 5.1 for cognitive skill, 4.9 for technical skill and 4.2 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
Mean	5.1	4.9	4.2	14.2
SD	1.3	1.6	1.7	4.4
Min	1.0	1.0	1.0	3.0
Max	9.0	9.0	9.0	27.0

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1.

**Figure 3.1**



<sup>2</sup> Please note that intensity descriptions are abbreviations only.

- a) Cognitive Skill = Cognitive Skill, Clinical Judgement and Communication Skills
- b) Technical Skill = Technical Skill and Physical Effort
- c) Stress = Stress Due to Risk

## Section 4 Summary of Rankings

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The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (i.e. time and intensity). This ranking process is the most important determinant in the development of relative values.

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. All of the 332 items reviewed by the Plastic Surgery Consensus Group are procedure items and of these 188 are link items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.1. The link items were given very much lower ranks than the non-link items. (Sum of Ranks Test,  $p < 0.001$ )

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Link	188	2	330	185.7
Non-Link	144	1	332	141.5
<b>Total</b>	<b>332</b>	<b>1</b>	<b>332</b>	<b>166.5</b>

Good maps of Plastic Surgery's items to CPT were available for 34 of their 332 items. A breakdown of the ranks given to these good map items and to the poor/non map items is set out in Table 4.2. The ranks given to the good map items were not significantly different from those given to the poor/non map items. This means that good map items (i.e. potential core items) are well spread throughout the ranks.

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Good Map	34	19	330	160.8
Poor/Non Map	298	1	332	167.2
<b>Total</b>	<b>332</b>	<b>1</b>	<b>332</b>	<b>166.5</b>

## Section 5 Relative Value Implications

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For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analyzed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for Plastic Surgery is 1 to 49.

By dividing imputed relative values by time we can impute relative rates of pay. The variation in relative rates of pay on pre time, intra time and post time is 1 to 3.0 in each case. Depending on both variations in intensity and on variations in the composition of times (different weightings for pre: intra: post), the range in relative rates of pay is 1 to 4.5

These ranges in relative rates of pay correspond to the median values observed for the specialties examined so far. In terms of deviations in rates of pay, there shouldn't therefore be any major difficulty in aligning Plastic Surgery's rankings and ratings with those of other groups.

Comparisons between link items and non link items and between Good Map Items and Poor/No Map Items in terms of imputed relative value (IRV) are set out in Table 5.1.

The imputed relative values given to link items were only significantly lower than those given to non-link items when log transformed data were tested (t test,  $p < 0.001$ ). There was no significant difference between the imputed relative values given to good map items and those given to poor/no map items.

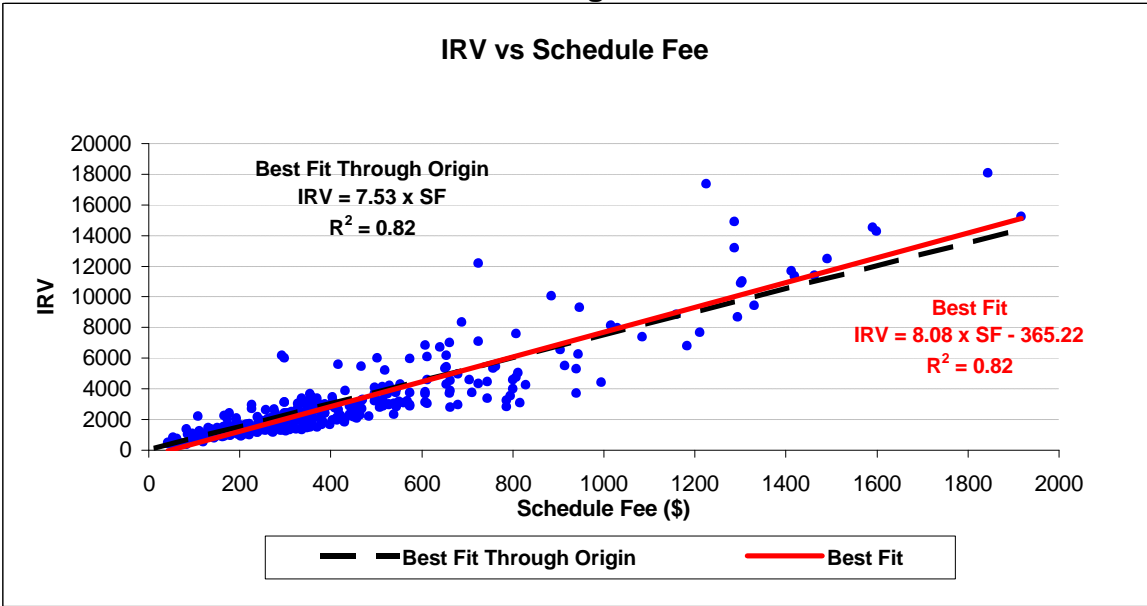
**Table 5.1**

Type of Item	Number Reviewed	IRVs			
		Mean $\pm$	SD	Low	High
<b>Link</b>	188	2877 $\pm$	2866	410	17352
<b>Non-link</b>	144	3380 $\pm$	2766	370	18060
<b>Good Map</b>	34	2735 $\pm$	1753	410	8680
<b>Poor/No Map</b>	298	3136 $\pm$	2927	370	18060
<b>Total</b>	332	3095 $\pm$	2830	370	18060

A plot of Plastic Surgery's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is good ( $R^2=0.82$ )<sup>3</sup> and is consistent with a straight line relationship through the origin. However, there are a number of outliers which should be investigated. These comprise MBS item numbers 39333, 45421, 45650, 45782 and 45785.

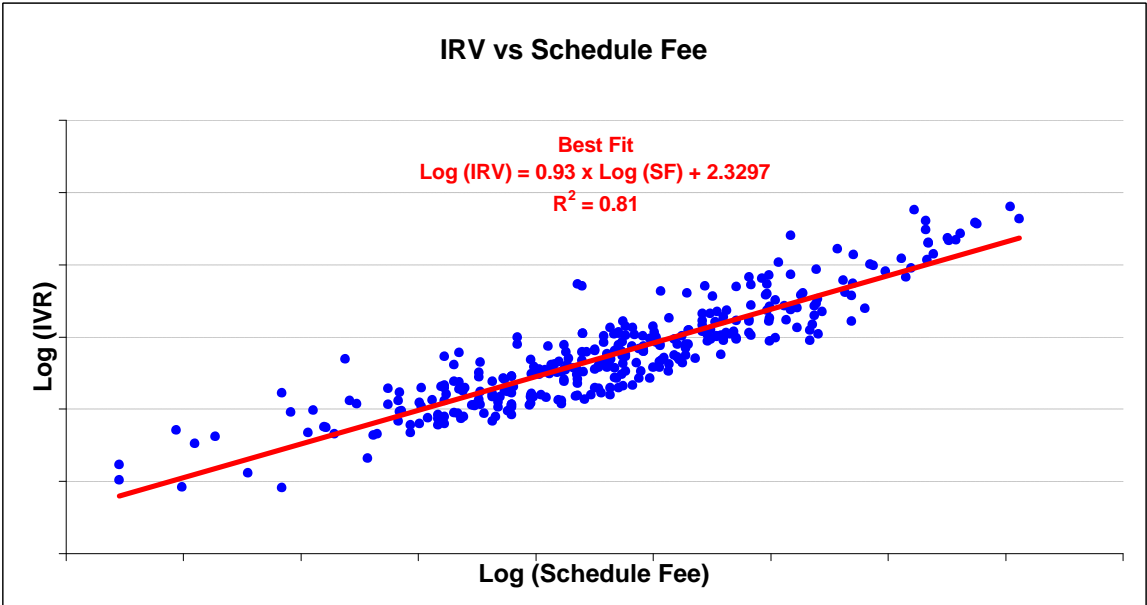
<sup>3</sup> An  $R^2$  value of 0.82 means that the line explains 82% of the variation.

Figure 5.1



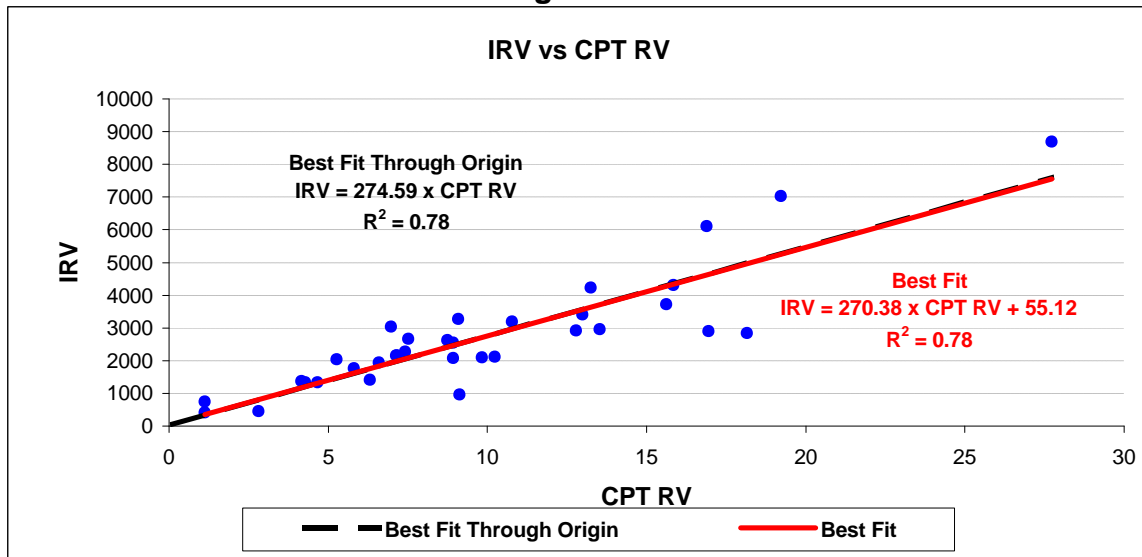
We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit is essentially unaltered.

Figure 5.2



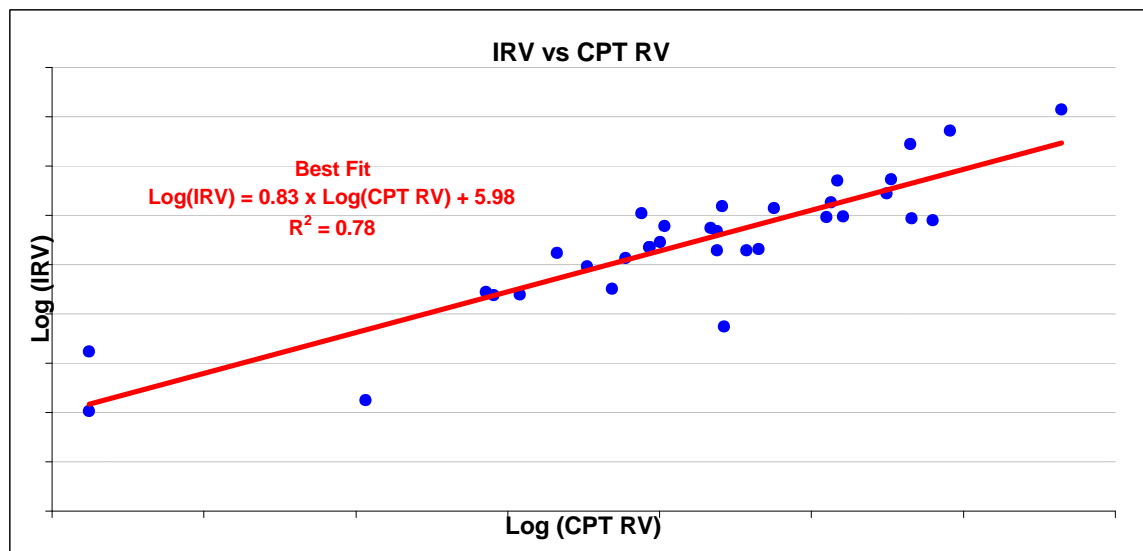
A plot of Plastic Surgery's IRVs against CPT RV is set out in Figure 5.3. The fit is good ( $R^2=0.78$ ) and the results are consistent with a simple proportional relationship between the scales.

Figure 5.3



A log/log plot is also provided (Figure 5.4). As above, the fit explains 78% of the variation. This graph highlights two outliers which should be investigated. They are MBS item numbers 45674 and 46456.

Figure 5.4





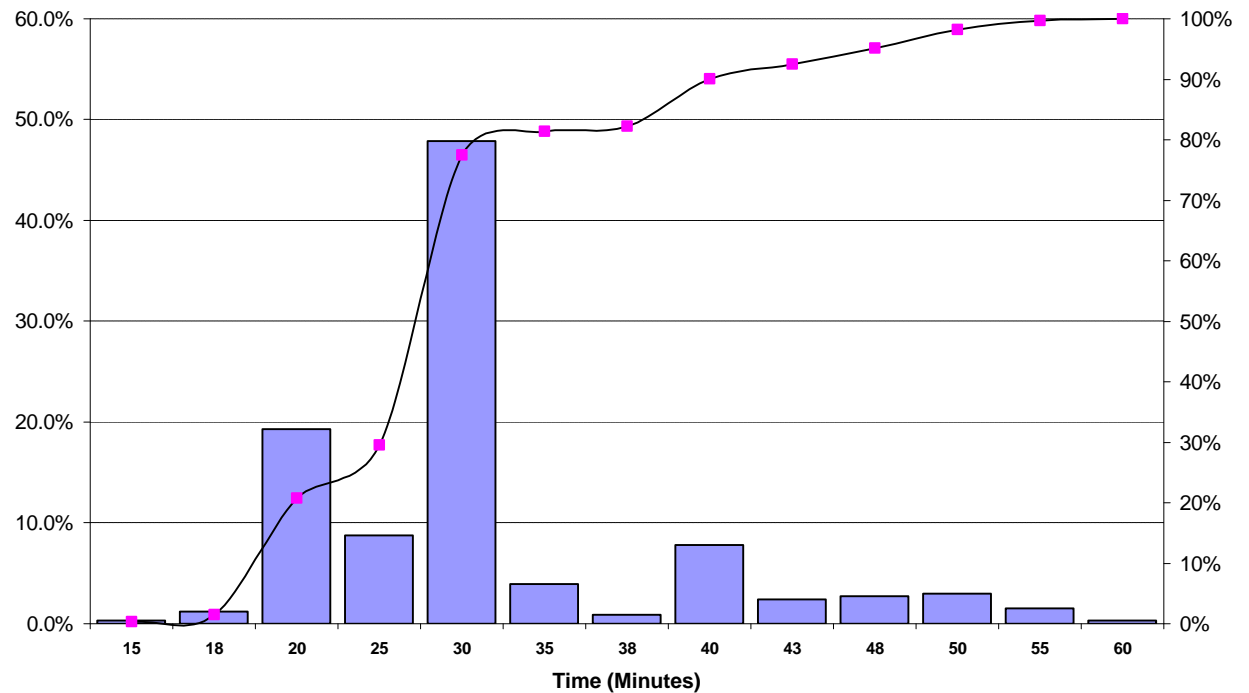
# Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

## Summary Report for Pre-Service Time

Time	Freq.	Percentage	Cum. Percentage
15	1	0.3%	0.3%
18	4	1.2%	1.5%
20	64	19.3%	20.8%
25	29	8.7%	29.5%
30	159	47.9%	77.4%
35	13	3.9%	81.3%
38	3	0.9%	82.2%
40	26	7.8%	90.1%
43	8	2.4%	92.5%
48	9	2.7%	95.2%
50	10	3.0%	98.2%
55	5	1.5%	99.7%
60	1	0.3%	100.0%
Total	332	100.0%	

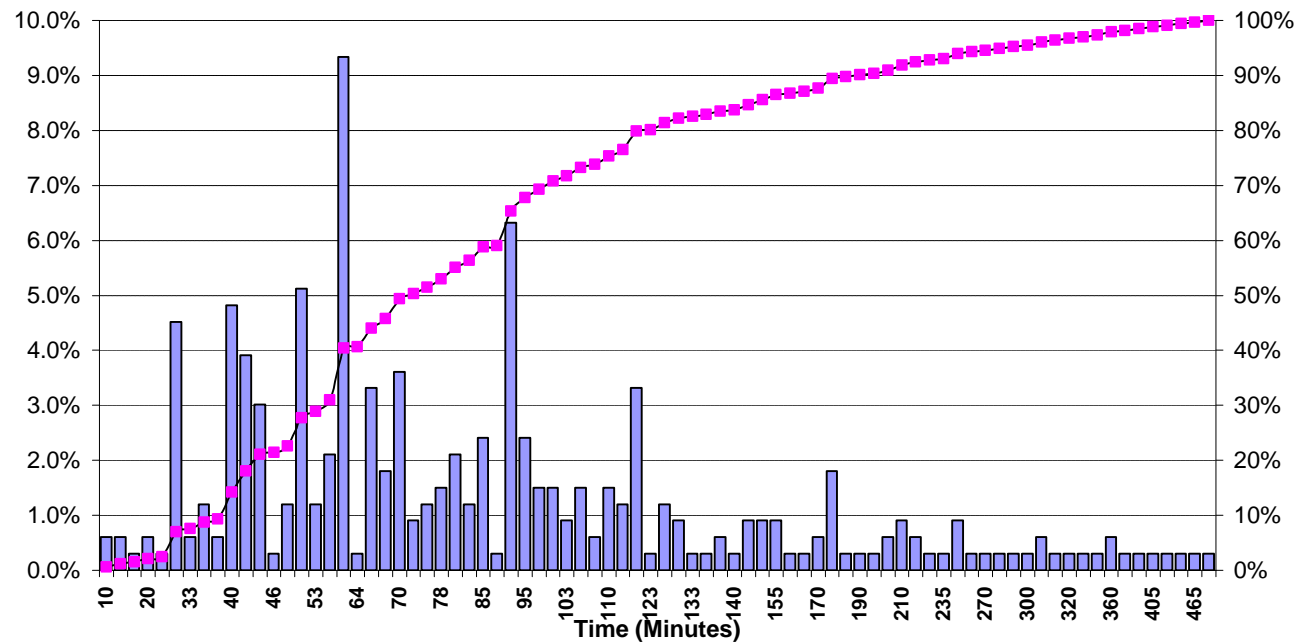
Number of missing values = 0



## Attachment 1 - Continued

### Summary Report for Intra-Service Time

Time	Freq.	Percentage	Cum. Percentage
10	2	0.6%	0.6%
15	2	0.6%	1.2%
18	1	0.3%	1.5%
20	2	0.6%	2.1%
25	1	0.3%	2.4%
30	15	4.5%	6.9%
33	2	0.6%	7.5%
35	4	1.2%	8.7%
38	2	0.6%	9.3%
40	16	4.8%	14.2%
43	13	3.9%	18.1%
45	10	3.0%	21.1%
46	1	0.3%	21.4%
48	4	1.2%	22.6%
50	17	5.1%	27.7%
53	4	1.2%	28.9%
55	7	2.1%	31.0%
60	31	9.3%	40.4%
64	1	0.3%	40.7%
65	11	3.3%	44.0%
68	6	1.8%	45.8%
70	12	3.6%	49.4%
73	3	0.9%	50.3%
75	4	1.2%	51.5%
78	5	1.5%	53.0%
80	7	2.1%	55.1%
83	4	1.2%	56.3%
85	8	2.4%	58.7%
88	1	0.3%	59.0%
90	21	6.3%	65.4%
95	8	2.4%	67.8%
98	5	1.5%	69.3%
100	5	1.5%	70.8%
103	3	0.9%	71.7%
105	5	1.5%	73.2% (continued next page)
108	2	0.6%	73.8%



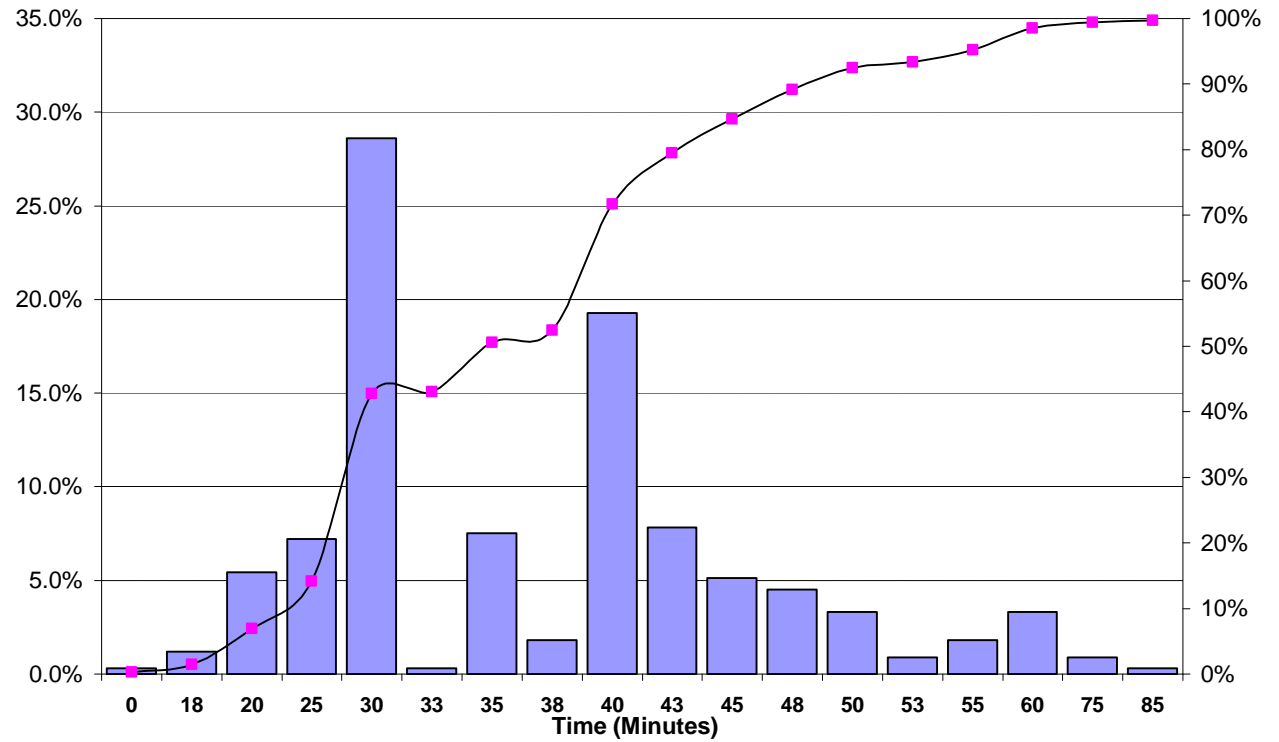
110	5	1.5%	75.3%
115	4	1.2%	76.5%
120	11	3.3%	79.8%
123	1	0.3%	80.1%
125	4	1.2%	81.3%
128	3	0.9%	82.2%
133	1	0.3%	82.5%
135	1	0.3%	82.8%
138	2	0.6%	83.4%
140	1	0.3%	83.7%
145	3	0.9%	84.6%
150	3	0.9%	85.5%
155	3	0.9%	86.4%
163	1	0.3%	86.7%
165	1	0.3%	87.0%
170	2	0.6%	87.7%
180	6	1.8%	89.5%
183	1	0.3%	89.8%
190	1	0.3%	90.1%
200	1	0.3%	90.4%
205	2	0.6%	91.0%
210	3	0.9%	91.9%
220	2	0.6%	92.5%
225	1	0.3%	92.8%
235	1	0.3%	93.1%
240	3	0.9%	94.0%
265	1	0.3%	94.3%
270	1	0.3%	94.6%
280	1	0.3%	94.9%
290	1	0.3%	95.2%
300	1	0.3%	95.5%
305	2	0.6%	96.1%
315	1	0.3%	96.4%
320	1	0.3%	96.7%
330	1	0.3%	97.0%
345	1	0.3%	97.3%
360	2	0.6%	97.9%
375	1	0.3%	98.2%
390	1	0.3%	98.5%
405	1	0.3%	98.8%
435	1	0.3%	99.1%
450	1	0.3%	99.4%
465	1	0.3%	99.7%
470	1	0.3%	100.0%
Total	332	100.0%	

Number of missing values = 0

# Attachment 1 - Continued

## Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
0	1	0.3%	0.3%
18	4	1.2%	1.5%
20	18	5.4%	6.9%
25	24	7.2%	14.2%
30	95	28.6%	42.8%
33	1	0.3%	43.1%
35	25	7.5%	50.6%
38	6	1.8%	52.4%
40	64	19.3%	71.7%
43	26	7.8%	79.5%
45	17	5.1%	84.6%
48	15	4.5%	89.2%
50	11	3.3%	92.5%
53	3	0.9%	93.4%
55	6	1.8%	95.2%
60	11	3.3%	98.5%
75	3	0.9%	99.4%
85	1	0.3%	99.7%
95	1	0.3%	100.0%
<b>Total</b>	<b>332</b>	<b>100.0%</b>	



Number of missing values = 0

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x PLAS/OTE
	ID	Type	Definition of Time *		PLAS	OTE	
OST	H4	Priv	Knife to Skin -to- Dressing Applied	87	70.1	46.6	150.6
	H6	Priv	Knife to Skin -to- Drapes Removed	71	66.2	46.7	141.7
	H11	Priv	Pt Prepped -to- Drapes Remov	84	68.1	74.4	91.5
OPERATION TIME ** (OPT)	H1	Priv	Pt Positioned -to- Drapes Removed	69	65.0	44.4	146.5
	H8	Priv	Pt Positioned -to- Drapes Removed	117	64.5	45.2	142.8
	H10	Priv	Pt Positioned -to- Drapes Removed	23	59.7	29.5	202.4
	H13	Priv	Pt Positioned -to- Drapes Removed	43	60.5	40.5	149.4
	H15	Priv	Pt Positioned -to- Drapes Removed	70	87.6	58.8	149.1
	H16	Pub	Pt Positioned -to- Dressing Applied	153	80.3	62.5	128.4
	H17	Pub	Surgeon with Pt -to- Drapes Removed	123	76.6	69.4	110.4
	H18	Priv	Pt Positioned -to- Drapes Removed	135	74.6	48.8	153.1
	H19	Pub	Pt Positioned -to- Dressing Applied	57	70.5	50.1	140.7
	H20	Pub	Pt Positioned -to- Dressing Applied	98	73.1	41.8	174.8
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	105	77.0	64.4	119.7
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	151	75.3	59.0	127.7
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Remov	61	69.0	49.9	138.2
OPERATION TIME 2 (OPT 2)	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	120	66.9	52.9	126.5
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	50	83.2	73.7	112.9
	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	44	50.7	31.4	161.3
	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	45	60.8	47.7	127.4
	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	72	88.6	66.5	133.2
	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	158	79.6	66.5	119.6
	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	127	77.2	76.7	100.7
	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	139	73.8	52.4	140.9
	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	92	76.6	55.2	138.8
	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	97	68.5	47.6	144.0
CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staff	154	75.5	63.2	119.6	
ANAESTHETIC TIME (OAT)	H1	Priv	Prep. Anaes. -to- Drapes Removed	74	65.0	55.8	116.5
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	89	69.0	75.8	91.0
	H6	Priv	Prep. Anaes. -to- Drapes Removed	75	66.8	59.4	112.4
	H8	Priv	Prep. Anaes. -to- Drapes Removed	124	66.8	59.1	113.0
	H10	Priv	Prep. Anaes. -to- Drapes Removed	24	61.3	40.8	150.3
	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	46	60.6	55.4	109.4
	H15	Priv	Induction of Anaes -to- Drapes Removed	72	88.6	73.3	120.8
	H16	Pub	Prep. Anaes. -to- Dressing Applied	156	79.5	76.0	104.6
	H17	Pub	Prep. Anaes. -to- Drapes Removed	136	78.1	98.1	79.6
	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	141	73.3	59.5	123.3
	H19	Pub	Prep. Anaes. -to- Dressing Applied	63	68.3	70.0	97.6
	H20	Pub	Prep. Anaes. -to- Dressing Applied	104	69.5	58.3	119.1
	CANS	Pub & Priv	Prep. Anaes. -to- Surg.Leaves Pt	154	75.3	66.4	113.4
Deloitte	Pub & Priv	Induction of Anaes. -to- Drapes Remov	61	69.0	59.2	116.6	
ANAESTHETIC TIME 2 (OAT 2)	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	331	98.8	110.3	89.6
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	113	71.7	72.8	98.6
	H7	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	115	64.1	48.8	131.3
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	126	67.1	64.3	104.5
	H9A	Priv	Prep. Anaes. -to- Trans. to Recovery Staff	49	84.4	87.3	96.6
	H9B	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	48	50.4	43.8	115.1
	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	85	67.8	90.0	75.3
	H12	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	17	61.9	49.9	124.0
	H14	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	164	79.8	82.6	96.6
	H15	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	73	88.6	79.9	110.9
	H16	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	160	79.0	81.7	96.7
	H17	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	137	78.0	104.8	74.4
	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	95	75.4	73.4	102.7
	H20	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	104	67.7	64.7	104.8
	CANS	Pub & Priv	Prep. Anaes. -to- Trans. to Recovery Staff	154	75.4	71.6	105.3
	WAGroup	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	264	88.1	69.9	126.0
TIME IN THEATRE (THT)	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	82	68.6	71.8	95.6
	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	37	71.6	66.1	108.3
	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	86	67.5	107.1	63.0
	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	48	62.4	63.7	98.0
	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	71	88.6	103.5	85.6
	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	143	73.3	64.2	114.3
	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	96	73.8	88.9	83.1
	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	108	61.2	41.4	148.0
	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	216	66.4	46.8	142.0
C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staff	46	57.0	36.7	155.6	

\* Definition of Time  
- see Attachment A

\*\* Median ratio of PLAS intra time estimates to OPT  
Unweighted = 142.8 %  
Weighted (for number of items in common) = 140.7 %

THEATRE TIMES DEFINITIONS - STANDARDISED FROM HOSPITALS AND OTHER SOURCES

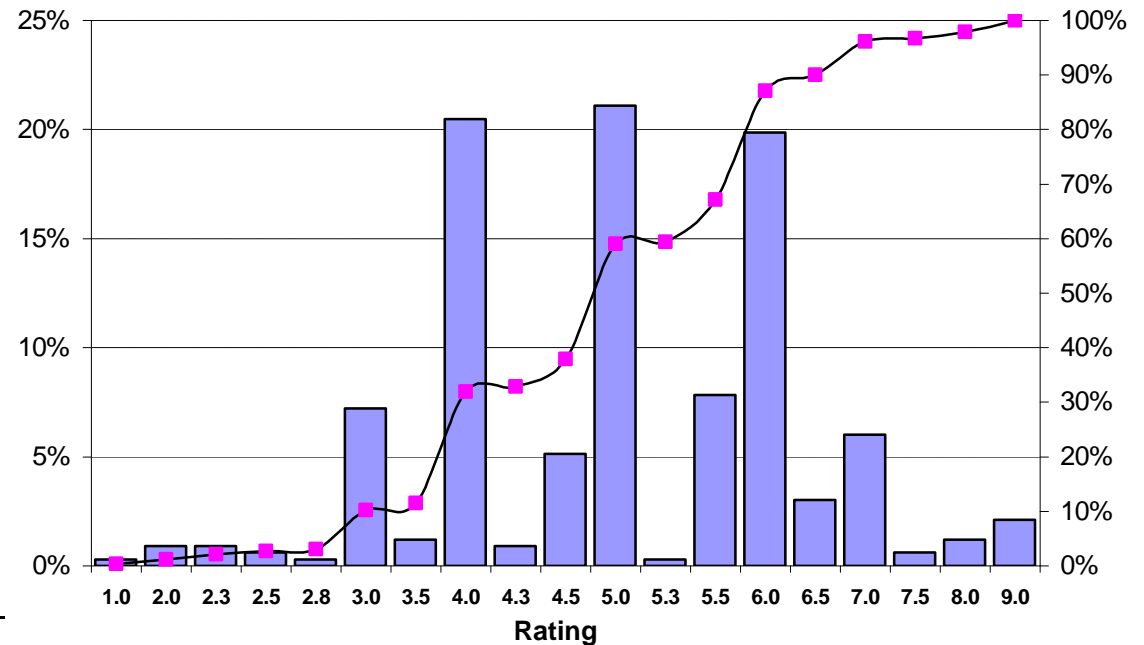
PATHWAYS FOR SURGEON AND ANAESTHETIST			PT ENTERS OP SUITE	PT ENTERS ANAESTHETIC BAY OR OPERATING ROOM			START OF TIME							END OF TIME		XFER TO RECOV	XFER FROM RECOV
				Anaesth. arrives to talk to Pt	Anaes prepares Pt for anaes-cannula/ lines insertion	Anaes. Commence admin/ induction of anaes	Surg. with Pt after anaes induction	Pt is position	Pt is draped	Pt is prep'ed	Knife to skin	Wound Closure	Dressing Applied	Drapes Removed	Surgical Team leave Pt	Reversal of anaes	Xfer of Pt to Recov. Staff
ID	Time	Type															
Hosp4	H4OST	Priv									/		/				
Hosp6	H6OST	Priv									/		/				
Hosp11	H11OST	Priv									/		/				
Hosp1	H1OPT	Priv						/					/				
Hosp8	H8OPT	Priv						/		/			/				
Hosp10	H10OPT	Priv						/		/			/				
Hosp13	H13OPT	Priv						/		/			/				
Hosp15	H15OPT	Priv						/		/			/				
Hosp16	H16OPT	Pub						/		/			/				
Hosp17	H17OPT	Pub					/			/			/				
Hosp18	H18OPT	Priv						/		/			/				
Hosp19	H19OPT	Pub						/		/			/				
Hosp20	H20OPT	Pub						/		/			/				
APHA	APHAOPT	Priv					/			/			/				
CANS	CANSOPT	Pub & Priv					/			/			/				
Deloitte	DTOPT	Pub & Priv					/		/	/			/				
Hosp8	H8OPT2	Priv						/		/			/				/
Hosp9A	H9AOPT2	Priv						/		/			/				/
Hosp9B	H9BOPT2	Priv/Day						/		/			/				/
Hosp13	H13OPT2	Priv						/		/			/				/
Hosp15	H15OPT2	Priv						/		/		/		/			/
Hosp16	H16OPT2	Pub						/		/			/				/
Hosp17	H17OPT2	Pub					/			/			/				/
Hosp18	H18OPT2	Priv						/		/			/				/
Hosp19	H19OPT2	Pub						/		/		/		/			/
Hosp20	H20OPT2	Pub						/		/			/				/
CANS	CANSOPT2	Pub & Priv					/			/			/				/
Hosp1	H1OAT	Priv		/									/				
Hosp4	H4OAT	Priv	/									/					
Hosp6	H6OAT	Priv		/								/					
Hosp8	H8OAT	Priv		/								/					
Hosp10	H10OAT	Priv		/								/		/			
Hosp13	H13OAT	Priv	/									/		/			
Hosp15	H15OAT	Pub		/	/							/		/			
Hosp16	H16OAT	Pub		/								/		/			
Hosp17	H17OAT	Priv		/								/		/			
Hosp18	H18OAT	Pub	/									/		/			
Hosp19	H19OAT	Pub		/								/		/			
Hosp20	H20OAT	Pub & Priv		/								/		/			
CAnS	CANSOAT	Pub & Priv		/								/		/			
Deloitte	DTOAT	Pub & Priv		/	/							/		/			
MBS	MBSOAT2	Pub & Priv		/								/		/			/
Hosp5	H5OAT2	Priv		/								/		/			/
Hosp7	H7OAT2	Priv/Day		/								/		/			/
Hosp8	H8OAT2	Priv		/								/		/			/
Hosp9A	H9AAT2	Priv		/								/		/			/
Hosp9B	H9BOAT2	Priv/Day		/								/		/			/
Hosp11	H11OAT2	Priv		/								/		/			/
Hosp12	H12OAT2	Pub		/								/		/			/
Hosp14	H14OAT2	Pub		/								/		/			/
Hosp15	H15OAT2	Priv		/	/							/		/			/
Hosp16	H16OAT2	Pub		/								/		/			/
Hosp17	H17OAT2	Pub		/								/		/			/
Hosp19	H19OAT2	Pub		/								/		/			/
Hosp20	H20OAT2	Pub		/								/		/			/
CANS	CANSOAT2	Pub & Priv		/								/		/			/
WAGroup	WAOAT2	Priv		/	/							/		/			/
Hosp2	H2THT	Priv	/									/		/			/
Hosp3	H3THT	Pub	/									/		/			/
Hosp11	H11THT	Pub	/									/		/		/	/
Hosp13	H13THT	Priv	/									/		/			/
Hosp15	H15THT	Priv	/									/		/			/
Hosp18	H18THT	Priv	/									/		/			/
Hosp19	H19THT	Day & Other	/									/		/			/
C'mix -Pub	CMXPUTHHT	Priv	/									/		/			/
C'mix -Pte	CMXPVTHHT	Priv	/									/		/			/
C'mix-oth	CMXOTHTHT	Priv	/									/		/			/

## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1.0	1	0.3%	0.3%
2.0	3	0.9%	1.2%
2.3	3	0.9%	2.1%
2.5	2	0.6%	2.7%
2.8	1	0.3%	3.0%
3.0	24	7.2%	10.2%
3.5	4	1.2%	11.4%
4.0	68	20.5%	31.9%
4.3	3	0.9%	32.8%
4.5	17	5.1%	38.0%
5.0	70	21.1%	59.0%
5.3	1	0.3%	59.3%
5.5	26	7.8%	67.2%
6.0	66	19.9%	87.0%
6.5	10	3.0%	90.1%
7.0	20	6.0%	96.1%
7.5	2	0.6%	96.7%
8.0	4	1.2%	97.9%
9.0	7	2.1%	100.0%
Total	332	100.0%	

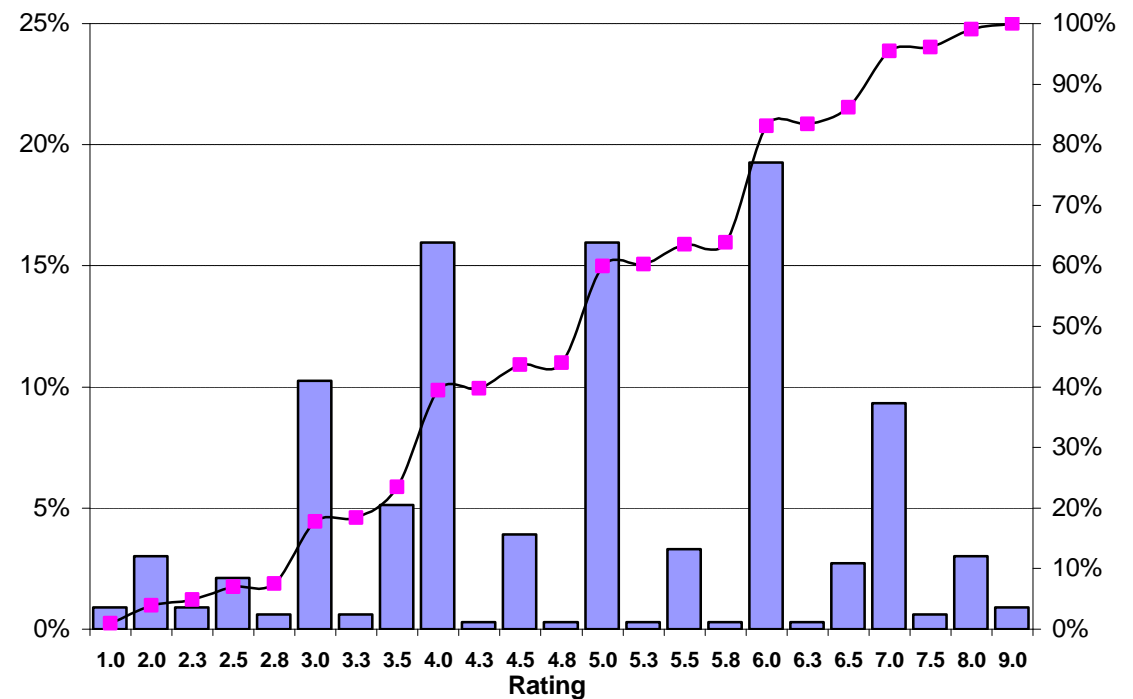


Number of missing values = 0

## Attachment 3 - Continued

### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1.0	3	0.9%	0.9%
2.0	10	3.0%	3.9%
2.3	3	0.9%	4.8%
2.5	7	2.1%	6.9%
2.8	2	0.6%	7.5%
3.0	34	10.2%	17.8%
3.3	2	0.6%	18.4%
3.5	17	5.1%	23.5%
4.0	53	16.0%	39.5%
4.3	1	0.3%	39.8%
4.5	13	3.9%	43.7%
4.8	1	0.3%	44.0%
5.0	53	16.0%	59.9%
5.3	1	0.3%	60.2%
5.5	11	3.3%	63.6%
5.8	1	0.3%	63.9%
6.0	64	19.3%	83.1%
6.3	1	0.3%	83.4%
6.5	9	2.7%	86.1%
7.0	31	9.3%	95.5%
7.5	2	0.6%	96.1%
8.0	10	3.0%	99.1%
9.0	3	0.9%	100.0%
<b>Total</b>	<b>332</b>	<b>100.0%</b>	



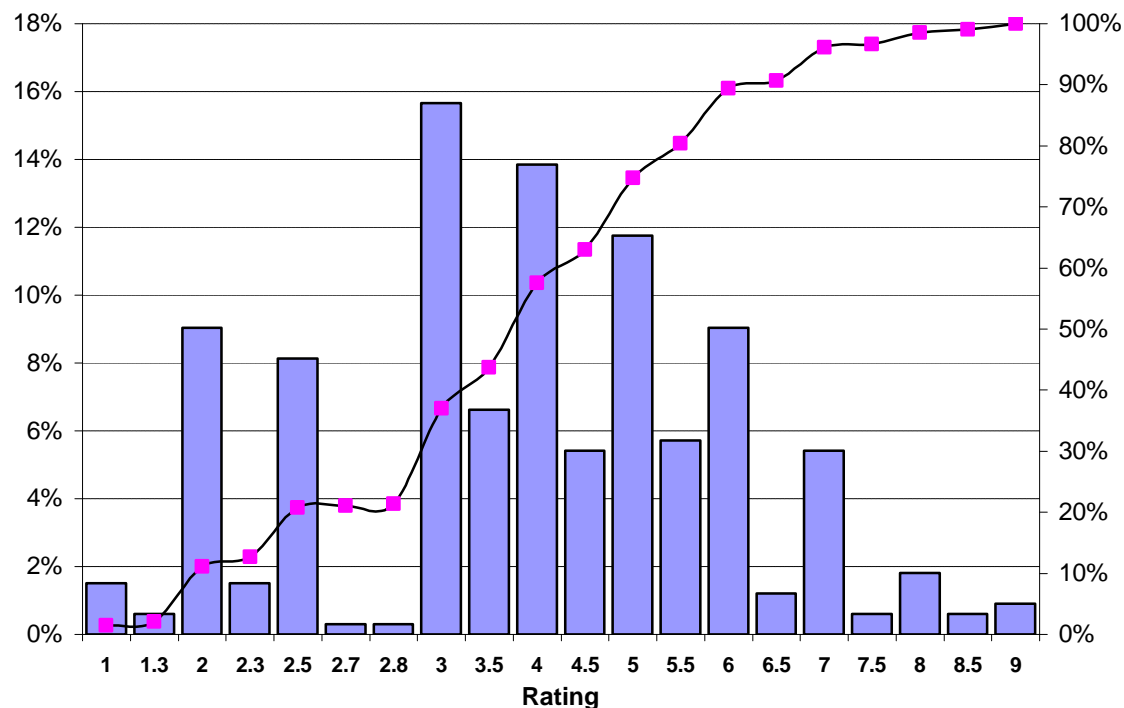
Number of missing values = 0



## Attachment 3 - Continued

### Summary Report for Stress.

Rating	Freq.	Percentage	Cum. Percentage
1	5	1.5%	1.5%
1.3	2	0.6%	2.1%
2	30	9.0%	11.1%
2.3	5	1.5%	12.7%
2.5	27	8.1%	20.8%
2.7	1	0.3%	21.1%
2.8	1	0.3%	21.4%
3	52	15.7%	37.0%
3.5	22	6.6%	43.7%
4	46	13.9%	57.5%
4.5	18	5.4%	63.0%
5	39	11.7%	74.7%
5.5	19	5.7%	80.4%
6	30	9.0%	89.5%
6.5	4	1.2%	90.7%
7	18	5.4%	96.1%
7.5	2	0.6%	96.7%
8	6	1.8%	98.5%
8.5	2	0.6%	99.1%
9	3	0.9%	100.0%
<b>Total</b>	<b>332</b>	<b>100.0%</b>	



Number of missing values = 0

## Attachment 4 - Links with Other Specialties

---

The number of link items between Plastic Surgery and the other Consensus Groups is set out below.

**Number of Links with Other Specialties**

<b>Specialty</b>	<b>Procedure Items</b>	<b>Consultation Items</b>	<b>Total Items</b>
Gen. Prac. & Emergency Med.	18	0	18
Oral & Maxillo-facial Surgery	45	0	45
Obstetrics / Gynaecology	1	0	1
General Surgery	26	0	26
Cardio Thoracic Surgery	1	0	1
Neurosurgery	3	0	3
Orthopaedic surgery	64	0	64
Paediatric Surgery	5	0	5
Urology	1	0	1
Vascular Surgery	1	0	1
Ophthalmology	10	0	10
ENT	11	0	11
Anaesthesia	0	0	0
Dermatology	36	0	36
Paediatric / Thoracic Medicine	0	0	0
General Medicine	0	0	0
Cardiology, Renal, ICU	0	0	0
Radiation, Oncology	0	0	0
Gastroenterology	0	0	0
Neurology	0	0	0
Haematology, Medical Oncology	0	0	0
Psychiatry	0	0	0
<b>Total</b>	<b>188</b>	<b>0</b>	<b>188</b>

## Glossary

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Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: a) being a good map b) having as high a frequency as possible c) being well spread in terms of their rank.
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.

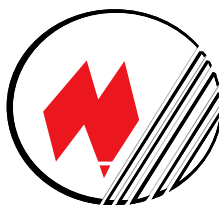
**CONFIDENTIAL DRAFT  
FOR DISCUSSION ONLY**

**Urology**  
**Summary Status Report**

**December 1999**

**Prepared For  
Medicare Schedule Review Board (MSRB)**

**Prepared By  
National Centre for Classification in Health (NCCH)**



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## Section 1 Overview

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This document outlines the results of an examination of the information sent to the NCCH by the Urology Consensus Group.

The Urology Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 227 items. These comprised 162 procedure items and 65 consultation items.

Analysis of this information showed:

- The median ratio of Urology's intra time estimates to NCCH's Theatre Time Database observed procedure times was 116.6%. This implies a tendency to over estimate intra times.
- The procedure items were given very much higher ranks than the consultation items ( $p < 0.001$ ).
- The ranks given to link items were very much lower than those given to non-link items ( $p < 0.001$ ).
- The ranks given to good map items were very much higher than those given to poor/no map items ( $p < 0.001$ ).
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 6.7.
- Given this comparatively large range in relative rates of pay and the comparatively low ranking of the link items, it could be difficult to align the group's rankings and ratings with those of the other groups.
- Consultation items were given very much lower imputed relative values<sup>1</sup> than procedure items.
- The link items were given very much lower imputed relative values than the non-link items.
- The good map items were given higher imputed relative values than the poor/no map items.
- The correlation between the imputed relative values for Urology and schedule fee was reasonable ( $R^2 = 78\%$ ).
- The correlation between the imputed relative values for Urology and CPT RV was poor ( $R^2 = 63\%$ ).

Readers are referred to the glossary at the back of this document for explanation of some of the terms used.

<sup>1</sup> The imputation of relative values and relative rates of pay and the reasons why they need to be considered are discussed in Section 5.

## Section 2 Summary of Time Estimates

The mean pre service, intra service, post service and total times for Urology are set out in Table 2.1 together with associated standard deviations and ranges.

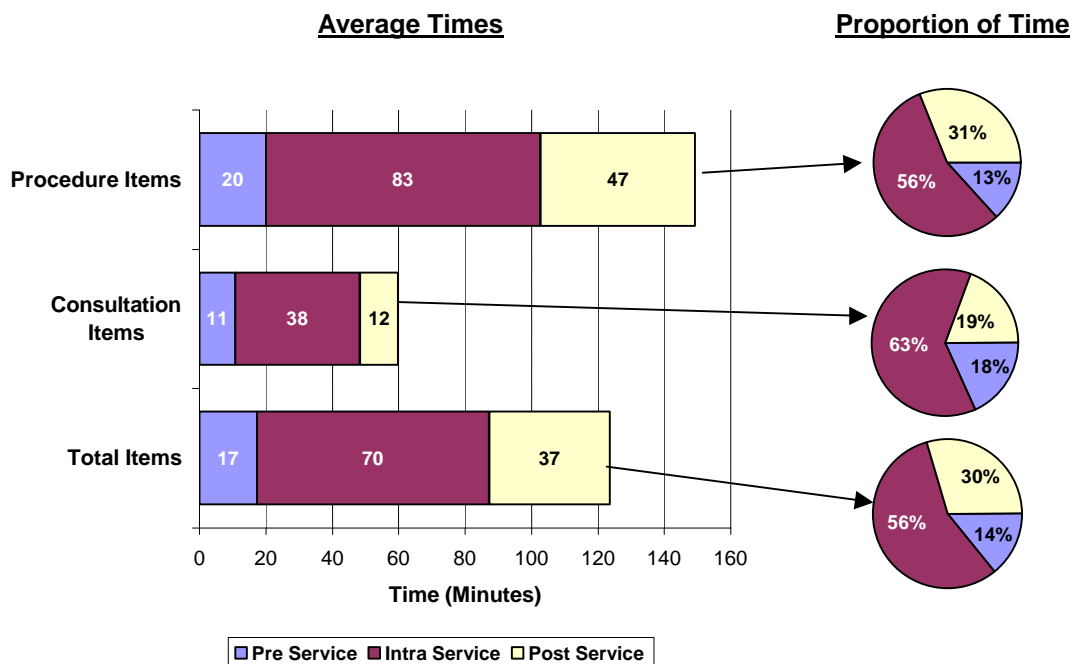
The mean intra service time was 70 minutes and the mean total time was 124 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1. The distribution of post times and, in particular, the peak at 75 minutes should be investigated.

**Table 2.1**

	Pre Service	Intra Service	Post Service	Total Time
<b>Mean</b>	17	70	37	124
<b>SD</b>	6	54	28	83
<b>Min</b>	5	5	5	15
<b>Max</b>	45	310	105	435

A graphical presentation of these mean times together with the percentage apportionments of total time are contained in Figure 2.1. These are provided for procedure items, consultation items and all items.

**Figure 2.1**



A summary breakdown is also provided in Table 2.2.

**Table 2.2**

<b>Average Times</b>	<b>Pre Service</b>	<b>Intra Service</b>	<b>Post Service</b>	<b>Total Time</b>
<b>Procedure Items</b>	20.1	82.7	46.5	149.3
<b>Consultation Items</b>	10.8	37.7	11.5	60.0
<b>Total Items</b>	17.4	69.8	36.5	123.7

Urology's intra time estimates were also compared against our data base of actual theatre times obtained from hospitals and other studies.

The median ratio of Urology's intra time estimates to the observed procedure times was 116.6%. This implies a tendency by this Consensus Group to over estimate their intra times. A more detailed analysis is provided in Attachment 2.



## Section 3 Summary of Intensity Ratings

The mean cognitive skill<sup>2</sup>, technical skill<sup>2</sup>, stress<sup>2</sup> and total intensity for Urology are set out in Table 3.1 together with associated standard deviations and ranges.

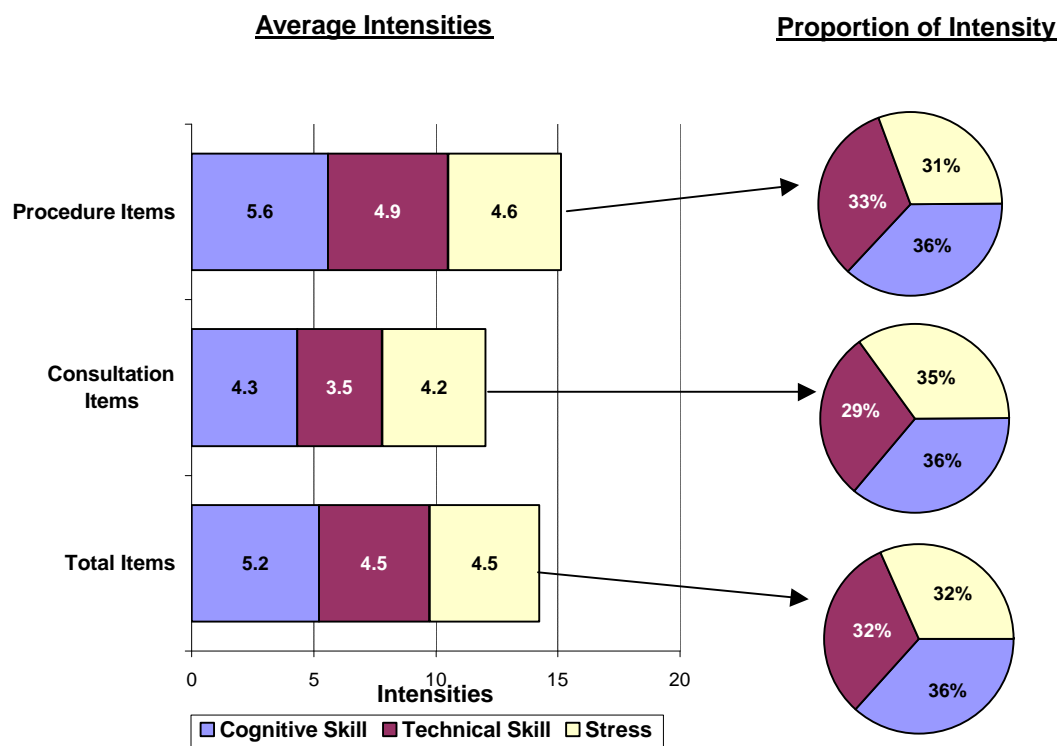
The mean ratings were 5.2 for cognitive skill, 4.5 for technical skill and 4.5 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

**Table 3.1**

	Cognitive Skill	Technical Skill	Stress	Total Intensity
Mean	5.2	4.5	4.5	14.2
SD	1.8	1.7	1.6	4.9
Min	2.0	1.0	1.0	4.0
Max	10.0	9.0	9.0	27.0

A graphical presentation of these mean ratings together with the percentage apportionment of total intensity is contained in Figure 3.1. They are provided for procedure items, consultation items and all items.

**Figure 3.1**



A summary breakdown is also provided in Table 3.2.

**Table 3.2**

<b>Intensity Ratings</b>	<b>Cognitive Skill</b>	<b>Technical Skill</b>	<b>Stress</b>	<b>Total Intensity</b>
<b>Procedure Items</b>	5.6	4.9	4.6	15.1
<b>Consultation Items</b>	4.3	3.5	4.2	12.0
<b>Total Items</b>	5.2	4.5	4.5	14.2

<sup>2</sup> Please note that intensity descriptions are abbreviations only.

a) Cognitive Skill = Cognitive Skill, Clinical Judgement and Communication Skills

b) Technical Skill = Technical Skill and Physical Effort

c) Stress = Stress Due to Risk

## Section 4 Summary of Rankings

The PRS method requires medical clinicians to rank all MBS items relevant to each specialty (Consensus Group) in terms of their professional work content (i.e. time and intensity). This ranking process is the most important determinant in the development of relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4.1. The procedure items were given very much higher ranks than the consultation items (sum of ranks test,  $p < 0.001$ ).

Table 4.1

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Procedure	162	1	226	95.4
Consultation	65	81	227	160.2
<b>Total</b>	<b>227</b>	<b>1</b>	<b>227</b>	<b>114.0</b>

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known as **link items**. The Urology Consensus Group assessed 105 link items. These comprised all 65 of their consultation items and 40 of the 162 procedure items. More details of the Group's link items are provided in Attachment 4.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4.2. The ranks given to link items were very much lower than those given to non-link items (sum of ranks test,  $p < 0.001$ ).

Table 4.2

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
Consultation	65	81	227	160.2
Procedure-Link	40	6	226	118.9
<b>Total Link</b>	<b>105</b>	<b>6</b>	<b>227</b>	<b>144.5</b>
<b>Non-Link (Procedure)</b>	<b>122</b>	<b>1</b>	<b>208</b>	<b>87.7</b>
<b>Total</b>	<b>227</b>	<b>1</b>	<b>227</b>	<b>114.0</b>

Good maps of Urology's items to CPT were available for 48 of their 227 items. A breakdown of the ranks given to these good map items and to the poor/no map items is set out in Table 4.3. The ranks given to good map items were very much higher than those given to poor/no map items. (sum of ranks test,  $p < 0.001$ ).

**Table 4.3**

Type of Item	Number Reviewed	Ranking		
		Highest	Lowest	Average
<b>Good Map</b>	48	5	215	84.6
<b>Poor/No Map</b>	179	1	227	121.9
<b>Total</b>	227	1	227	114.0

## Section 5 Relative Value Implications

---

For most if not all of the CGs' ranked items, it is possible to impute relative values by examining the relationship between the rankings and the times and intensities.

Where CGs have used formulae to assist in determining their rankings (a majority of cases), these imputed relative values can often be derived directly from these formulae.

It is important that these imputed relative values are thoroughly analyzed:

- a) To ensure that they are fiscally viable (e.g. they result in acceptable ranges of rates of pay; they do not reward medical clinicians for negligible amounts of work nor do they result in little or no pay for many additional hours of work),
- b) To check that they are acceptable in terms of their consistency with CPT and with the imputed relative values of other specialties. This is to forewarn us of likely problems in aligning the specialty's rankings and ratings with the rankings and ratings of other specialties, and
- c) To guard against the possibility of "game playing".

The ratio of lowest to highest imputed relative value for Urology is 1 to 150.3.

By dividing imputed relative values by time we can impute relative rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the range in relative rates of pay is 1 to 4.5. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the range in relative rates of pay is 1 to 6.7.

These ranges in relative rates of pay are higher than the median observed for specialties examined so far<sup>3</sup>. In terms of deviations in rates of pay, it could be difficult to align Urology's rankings and ratings with those of the other groups and this could be compounded because the link items are ranked so low.

<sup>3</sup> The median range in relative rates of pay depending on intensity alone is 1 to 3.0. The median range depending on both variations in intensity and variations in the composition of times is 1 to 4.8.

Comparisons between consultation and procedure items, between link items and non link items and between good map items and poor/no map items in terms of imputed relative value (IRV) are set out in Table 5.1.

The consultation items were given imputed relative values that were very much lower than those given to the procedure items (t tests,  $p < 0.001$ ). The link items were given very much lower imputed relative values than the non-link items (t tests,  $p < 0.001$ ). The range for link items lacks high values which could cause problems with alignment. The good map items were given higher imputed relative values than the poor/no map items however the difference was only significant when log transformed data were tested (t test,  $p < 0.001$ ).

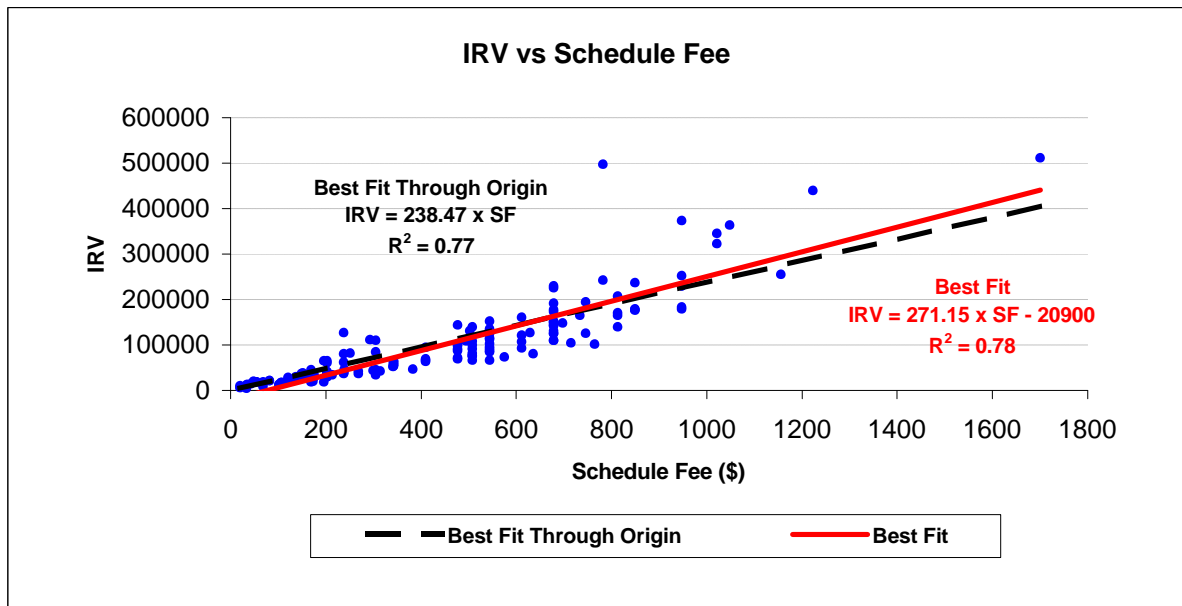
**Table 5.1**

Type of Item	Number Reviewed	IRVs			
		Mean	$\pm$ SD	Low	High
<b>Consultation</b>	162	99687	$\pm$ 90446	3522	511546
<b>Procedure</b>	65	33807	$\pm$ 23991	3403	77305
<b>Link</b>	105	50843	$\pm$ 55522	3403	344603
<b>Non-link</b>	122	106625	$\pm$ 93553	11698	511546
<b>Good Map</b>	48	98042	$\pm$ 63899	8435	363758
<b>Poor/No Map</b>	179	76205	$\pm$ 86935	3403	511546
<b>Total</b>	227	80822	$\pm$ 82955	3403	511546

A plot of Urology's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is reasonable ( $R^2 = 0.78$ )<sup>4</sup>. However the outlier MBS item number 37014 should be investigated.

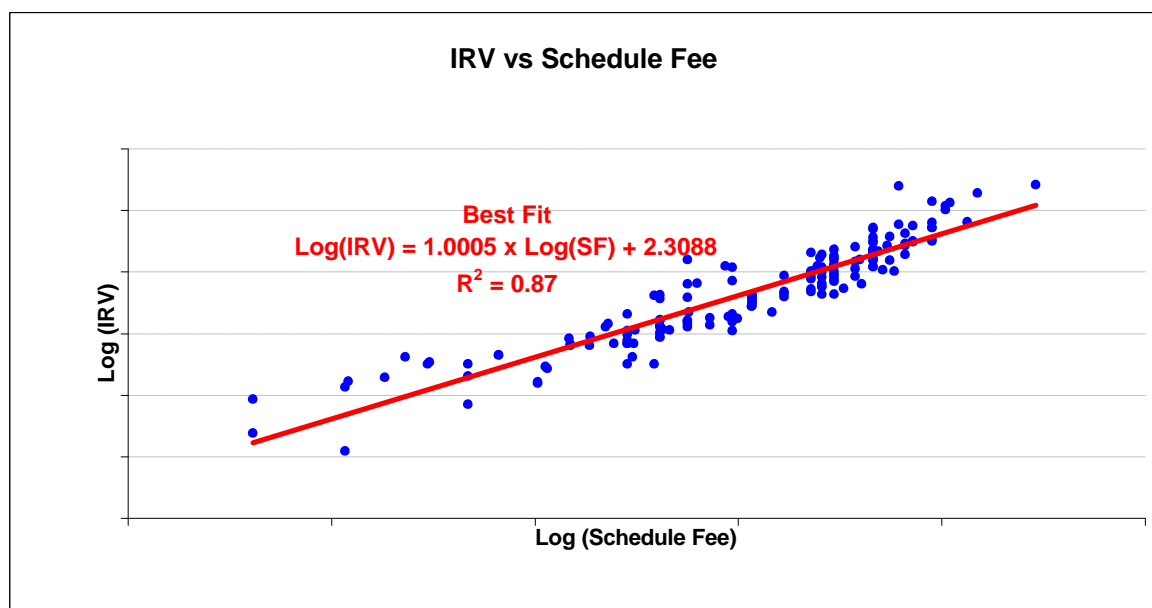
<sup>4</sup> An  $R^2$  value of 0.78 means that the line explains 78% of the variation.

Figure 5.1



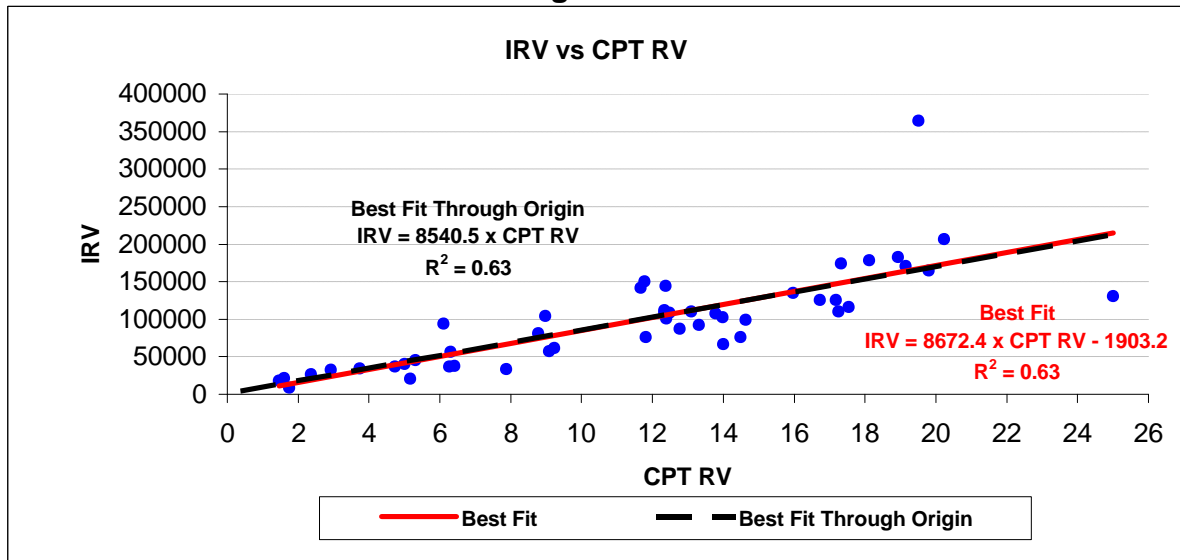
We might expect the magnitude of error deviation to be small for low value items and large for high value items. For this reason, it is appropriate to also consider the plot of log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit explains 87% of the variation as against 78% previously.

Figure 5.2



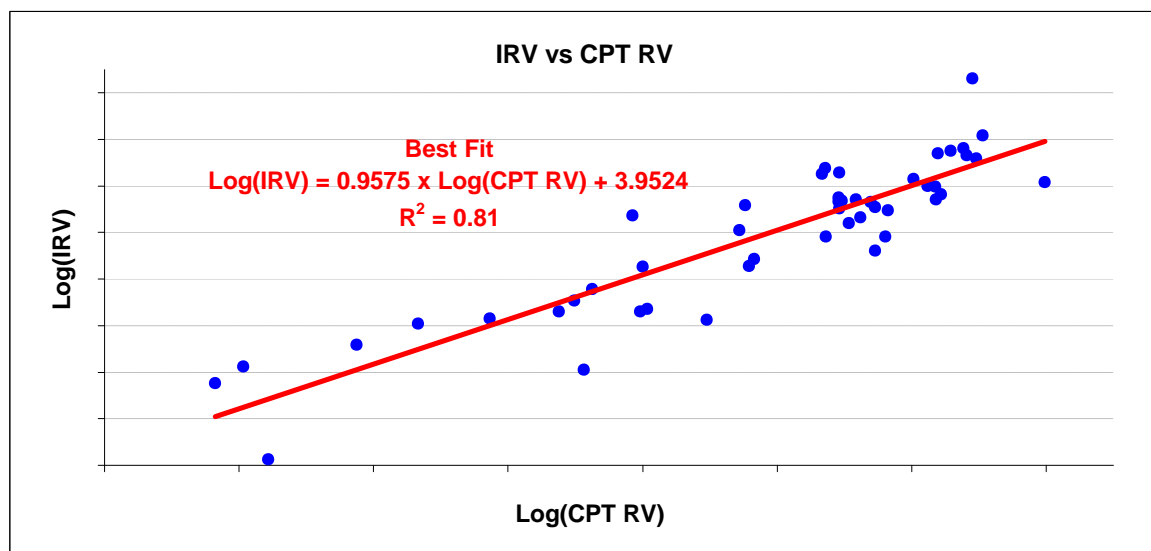
A plot of Urology's IRVs against CPT RV is set out in Figure 5.3. The fit is not good ( $R^2 = 0.63$ ). However there two outliers, MBS item numbers 37045 and 37050, which should be investigated. If these are removed the fit improves dramatically ( $R^2 = 0.79$ ).

Figure 5.3



A log/log plot is also provided (Figure 5.4). The fit explains 81% of the variation as against 63% previously. There are four outliers which should be investigated. These are MBS item numbers 30631, 37321 and 37393 in addition to 37045, which was mentioned previously.

Figure 5.4





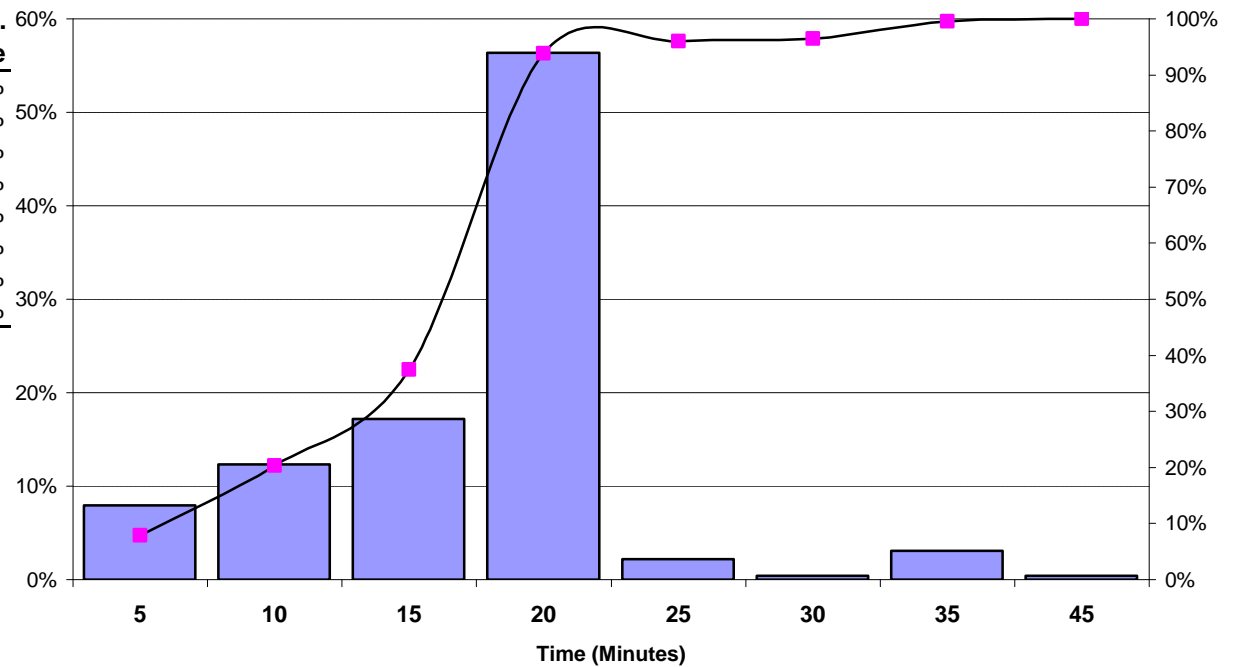
# Attachment 1 - Frequency Distributions - Time Estimates

The following tables and figures illustrate the frequency and percentage of pre, intra, and post service times mentioned by this Consensus Group. The distribution of times is shown by a series of bars while a continuous line represents the cumulative percentage.

## Summary Report for Pre-Service Time

Time	Freq.	Percentage	Cum. Percentage
5	18	7.9%	7.9%
10	28	12.3%	20.3%
15	39	17.2%	37.4%
20	128	56.4%	93.8%
25	5	2.2%	96.0%
30	1	0.4%	96.5%
35	7	3.1%	99.6%
45	1	0.4%	100.0%
Total	227	100.0%	

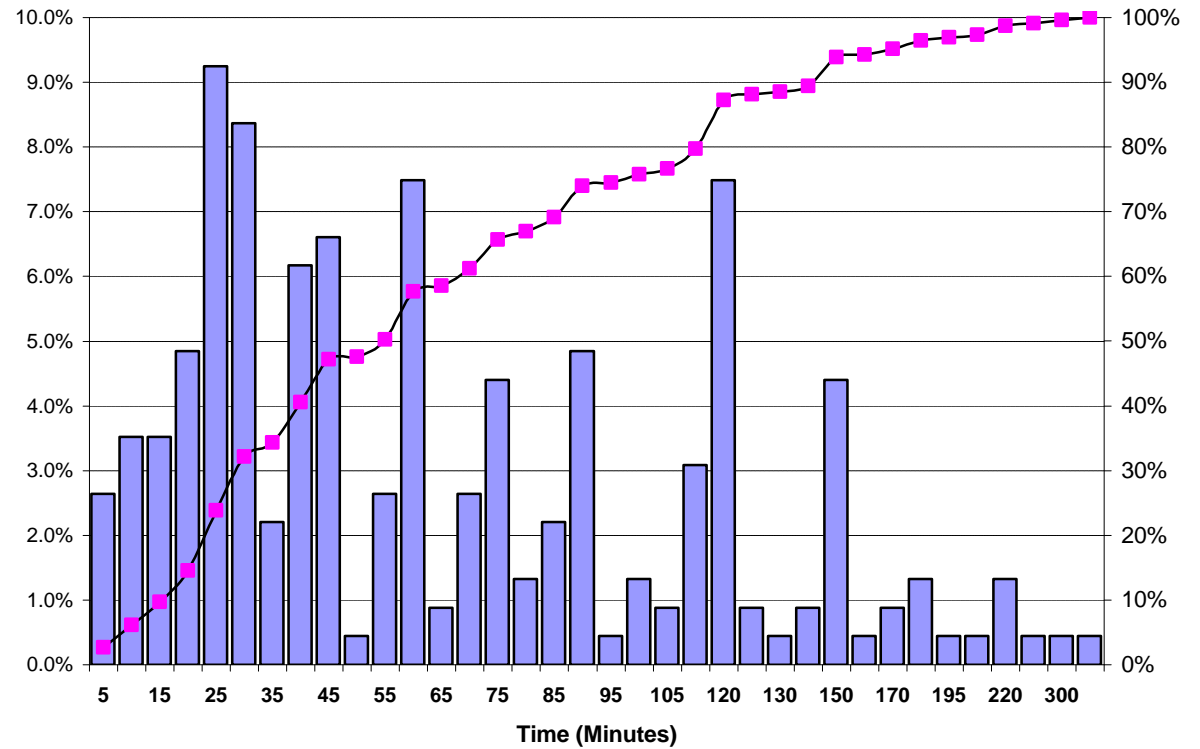
Number of missing values = 0



# Attachment 1 - Continued

## Summary Report for Intra-Service Time

Time	Freq.	Percentage	Cum. Percentage
5	6	2.6%	2.6%
10	8	3.5%	6.2%
15	8	3.5%	9.7%
20	11	4.8%	14.5%
25	21	9.3%	23.8%
30	19	8.4%	32.2%
35	5	2.2%	34.4%
40	14	6.2%	40.5%
45	15	6.6%	47.1%
50	1	0.4%	47.6%
55	6	2.6%	50.2%
60	17	7.5%	57.7%
65	2	0.9%	58.6%
70	6	2.6%	61.2%
75	10	4.4%	65.6%
80	3	1.3%	67.0%
85	5	2.2%	69.2%
90	11	4.8%	74.0%
95	1	0.4%	74.4%
100	3	1.3%	75.8%
105	2	0.9%	76.7%
110	7	3.1%	79.7%
120	17	7.5%	87.2%
125	2	0.9%	88.1%
130	1	0.4%	88.5%
140	2	0.9%	89.4%
150	10	4.4%	93.8%
160	1	0.4%	94.3%
170	2	0.9%	95.2%
180	3	1.3%	96.5%
195	1	0.4%	96.9%



continued next page

200	1	0.4%	97.4%
220	3	1.3%	98.7%
260	1	0.4%	99.1%
300	1	0.4%	99.6%
310	1	0.4%	100.0%
Total	227	100.0%	

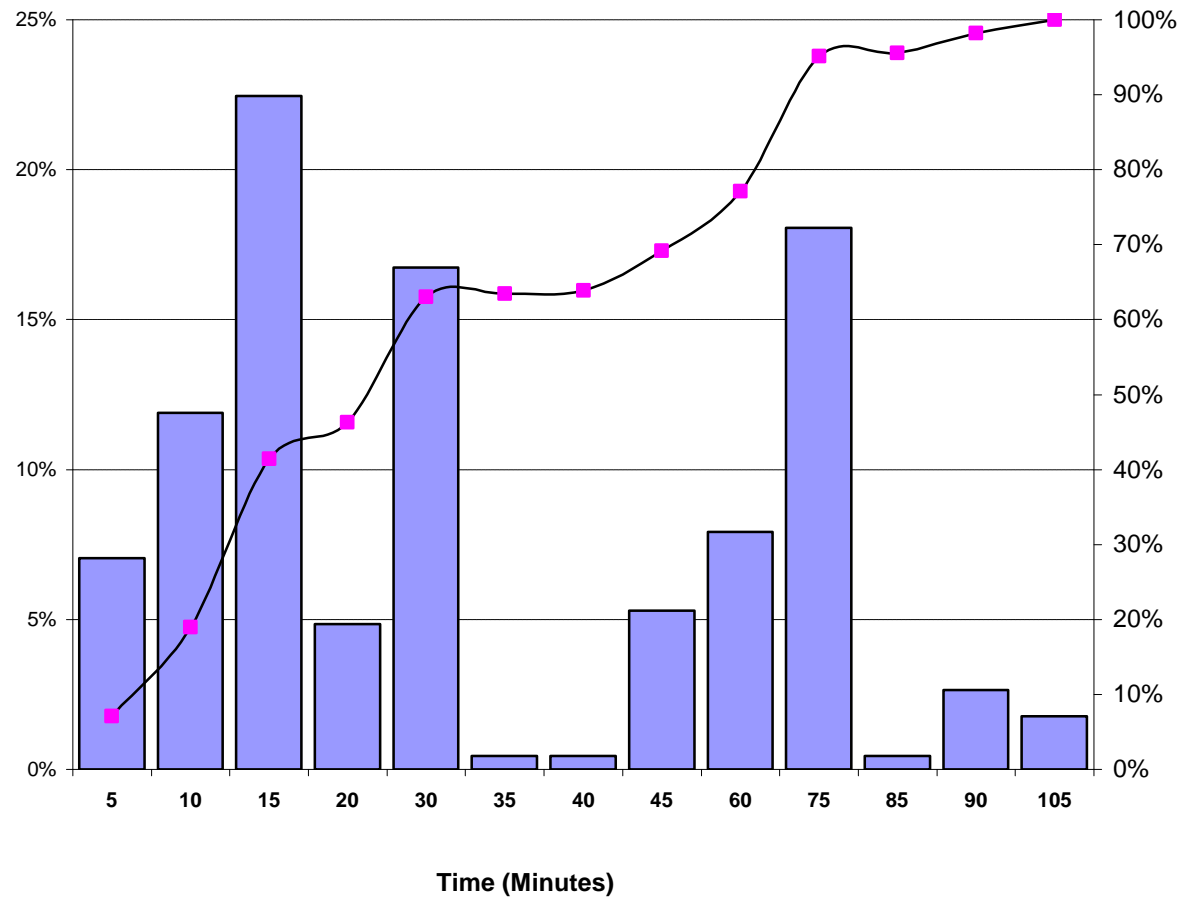
Number of missing values = 0

# Attachment 1 - Continued

## Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage
5	16	7.0%	7.0%
10	27	11.9%	18.9%
15	51	22.5%	41.4%
20	11	4.8%	46.3%
30	38	16.7%	63.0%
35	1	0.4%	63.4%
40	1	0.4%	63.9%
45	12	5.3%	69.2%
60	18	7.9%	77.1%
75	41	18.1%	95.2%
85	1	0.4%	95.6%
90	6	2.6%	98.2%
105	4	1.8%	100.0%
<b>Total</b>	<b>227</b>	<b>100.0%</b>	

Number of missing values = 0



COMPARISON OF UROLOGY (UROL)  
INTRA TIME ESTIMATES WITH OTHER ESTIMATES

Time	OTHER TIME ESTIMATE (OTE)			No. of items in common	Average Time in Minutes		Ratio 100 x UROL/OTE
	ID	Type	Definition of Time *		UROL	OTE	
OST	H4	Priv	Knife to Skin -to- Dressing Applied	49	61.3	55.4	110.7
	H6	Priv	Knife to Skin -to- Drapes Removed	39	55.5	49.3	112.7
	H11	Priv	Pt Prepped -to- Drapes Removed	23	50.9	72.6	70.1
OPERATION TIME ** (OPT)	H1	Priv	Pt Positioned -to- Drapes Removed	32	49.7	34.9	142.5
	H8	Priv	Pt Positioned -to- Drapes Removed	54	67.1	51.8	129.6
	H10	Priv	Pt Positioned -to- Drapes Removed	16	51.3	28.1	182.4
	H13	Priv	Pt Positioned -to- Drapes Removed	20	38.0	25.6	148.2
	H15	Priv	Pt Positioned -to- Drapes Removed	28	54.5	36.0	151.4
	H16	Pub	Pt Positioned -to- Dressing Applied	53	67.5	64.9	103.9
	H17	Pub	Surgeon with Pt -to- Drapes Removed	76	80.3	88.3	90.9
	H18	Priv	Pt Positioned -to- Drapes Removed	67	65.5	55.9	117.2
	H19	Pub	Pt Positioned -to- Dressing Applied	51	78.2	56.1	139.4
	H20	Pub	Pt Positioned -to- Dressing Applied	55	70.8	60.8	116.6
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	86	76.4	72.2	105.8
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	60	59.7	60.0	99.5
Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removed	41	52.4	45.0	116.7	
OPERATION TIME 2 (OPT 2)	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	57	66.9	57.5	116.5
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	48	86.6	81.1	106.8
	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	34	36.0	25.7	140.4
	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	20	38.0	28.7	132.3
	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	29	54.5	41.1	132.5
	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	54	66.7	68.8	97.0
	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	78	78.9	94.8	83.2
	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	70	67.4	66.8	100.8
	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	72	79.3	63.0	125.8
	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	57	69.9	68.0	102.8
CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staff	60	59.7	64.7	92.2	
ANAESTHETIC TIME (OAT)	H1	Priv	Prep. Anaes. -to- Drapes Removed	33	50.0	48.4	103.3
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	55	67.0	92.8	72.2
	H6	Priv	Prep. Anaes. -to- Drapes Removed	41	55.6	61.4	90.6
	H8	Priv	Prep. Anaes. -to- Drapes Removed	60	67.2	63.5	105.8
	H10	Priv	Prep. Anaes. -to- Drapes Removed	16	51.3	43.0	119.1
	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	20	38.0	37.4	101.7
	H15	Priv	Induction of Anaes -to- Drapes Removed	29	53.5	45.4	117.8
	H16	Pub	Prep. Anaes. -to- Dressing Applied	59	65.7	76.6	85.7
	H17	Pub	Prep. Anaes. -to- Drapes Removed	81	80.7	124.3	64.9
	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	72	68.8	77.3	89.0
	H19	Pub	Prep. Anaes. -to- Dressing Applied	54	75.9	76.8	98.8
	H20	Pub	Prep. Anaes. -to- Dressing Applied	57	68.4	80.6	84.9
CANS	Pub & Priv	Prep. Anaes. -to- Surg.Leaves Pt	61	60.2	69.5	86.6	
Deloitte	Pub & Priv	Induction of Anaes. -to- Drapes Removed	40	53.1	53.8	98.8	
ANAESTHETIC TIME 2 (OAT 2)	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	155	85.1	90.7	93.8
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	29	57.1	59.8	95.4
	H7	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	27	40.9	35.5	115.4
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	59	67.6	68.8	98.3
	H9A	Priv	Prep. Anaes. -to- Trans. to Recovery Staff	50	84.7	93.3	90.8
	H9B	Priv/Day	Prep. Anaes. -to- Trans. to Recovery Staff	35	35.7	35.9	99.4
	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	25	51.4	95.7	53.7
	H12	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	10	50.0	64.3	77.8
	H14	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	90	76.1	95.9	79.3
	H15	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	30	52.2	49.9	104.5
	H16	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	58	64.8	83.4	77.8
	H17	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	81	80.7	132.2	61.0
	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	77	76.9	85.4	90.0
	H20	Pub	Prep. Anaes. -to- Trans. to Recovery Staff	57	68.4	89.2	76.7
	CANS	Pub & Priv	Prep. Anaes. -to- Trans. to Recovery Staff	61	60.2	74.3	81.0
WAGroup	Priv	Induction of Anaes. -to- Trans. to Recovery Staff	128	81.5	75.4	108.1	
TIME IN THEATRE (THT)	H2	Priv	Anaesthetist with Pt -to- Trans. to Recovery Staff	56	65.7	72.5	90.7
	H3	Priv	Anaesthetist with Pt -to- Trans. to Recovery Staff	3	35.0	36.3	96.3
	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	26	50.4	113.0	44.6
	H13	Priv	Anaesthetist with Pt -to- Trans. to Recovery Staff	20	38.0	40.5	93.9
	H15	Priv	Anaesthetist with Pt -to- Trans. to Recovery Staff	30	52.5	64.0	82.0
	H18	Priv	Anaesthetist with Pt -to- Trans. to Recovery Staff	74	70.9	88.5	80.1
	H19	Pub	Pt. Arrives in Theatre -to- Trans. to Recovery Staff	74	74.5	99.3	75.0
	C'mix	Pub	Anaesthetist with Pt -to- Trans. to Recovery Staff	46	36.6	33.9	108.1
	C'mix	Priv	Anaesthetist with Pt -to- Trans. to Recovery Staff	70	45.1	36.5	123.4
C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans. to Recovery Staff	23	37.4	30.2	123.9	

\* Definition of Time  
- see Attachment A

\*\* Median ratio of UROL intra time estimates to OPT  
Unweighted = 117.2 %  
Weighted (for number of items in common) = 116.6 %

**ATTACHMENT A  
THEATRE TIMES DEFINITIONS - STANDARDISED FROM HOSPITALS AND OTHER SOURCES**

PATHWAYS FOR SURGEON AND ANAESTHETIST			PT ENTERS OP SUITE	PT ENTERS ANAESTHETIC BAY OR OPERATING ROOM			START OF TIME						END OF TIME		XFER TO RECOV	XFER FROM RECOV
				Anaesth. arrives to talk to Pt	Anaesth. prepares Pt for anaes-cannula/ lines insertion	Anaes. Commence admin/ induction of anaes	Surg. with Pt after anaes induction	Pt is positioned	Pt is draped	Pt is prep'ed	Knife to skin	Wound Closure	Dressing Applied	Drapes Removed	Surgical Team leave Pt	
ID	TIME	TYPE														
Hosp4	H4OST	Priv														
Hosp6	H6OST	Priv														
Hosp11	H11OST	Priv														
Hosp1	H1OPT	Priv														
Hosp8	H8OPT	Priv														
Hosp10	H10OPT	Priv														
Hosp13	H13OPT	Priv														
Hosp15	H15OPT	Priv														
Hosp16	H16OPT	Pub														
Hosp17	H17OPT	Pub														
Hosp18	H18OPT	Priv														
Hosp19	H19OPT	Pub														
Hosp20	H20OPT	Pub														
APHA	APHAOPT	Priv														
CANS	CANSOPT	Pub & Priv														
Deloitte	DTOPT	Pub & Priv														
Hosp8	H8OPT2	Priv														
Hosp9A	H9AOPT2	Priv														
Hosp9B	H9BOPT2	Priv/Day														
Hosp13	H13OPT2	Priv														
Hosp15	H15OPT2	Priv														
Hosp16	H16OPT2	Pub														
Hosp17	H17OPT2	Pub														
Hosp18	H18OPT2	Priv														
Hosp19	H19OPT2	Pub														
Hosp20	H20OPT2	Pub														
CANS	CANSOPT2	Pub & Priv														
Hosp1	H1OAT	Priv														
Hosp4	H4OAT	Priv														
Hosp6	H6OAT	Priv														
Hosp8	H8OAT	Priv														
Hosp10	H10OAT	Priv														
Hosp13	H13OAT	Priv														
Hosp15	H15OAT	Pub														
Hosp16	H16OAT	Pub														
Hosp17	H17OAT	Priv														
Hosp18	H18OAT	Pub														
Hosp19	H19OAT	Pub														
Hosp20	H20OAT	Pub & Priv														
CAnS	CANSOAT	Pub & Priv														
Deloitte	DTOAT	Pub & Priv														
MBS	MBSOAT2	Pub & Priv														
Hosp5	H5OAT2	Priv														
Hosp7	H7OAT2	Priv/Day														
Hosp8	H8OAT2	Priv														
Hosp9A	H9AAT2	Priv														
Hosp9B	H9BOAT2	Priv/Day														
Hosp11	H11OAT2	Priv														
Hosp12	H12OAT2	Pub														
Hosp14	H14OAT2	Pub														
Hosp15	H15OAT2	Priv														
Hosp16	H16OAT2	Pub														
Hosp17	H17OAT2	Pub														
Hosp19	H19OAT2	Pub														
Hosp20	H20OAT2	Pub														
CANS	CANSOAT2	Pub & Priv														
WAGroup	WAOAT2	Priv														
Hosp2	H2THT	Priv														
Hosp3	H3THT	Pub														
Hosp11	H11THT	Pub														
Hosp13	H13THT	Priv														
Hosp15	H15THT	Priv														
Hosp18	H18THT	Priv														
Hosp19	H19THT	Day & Other														
C'mix -Pub	CMXPVTH	Priv														
C'mix -Pte	CMXPVTH	Priv														
C'mix -On	CMXPVTH	Priv														

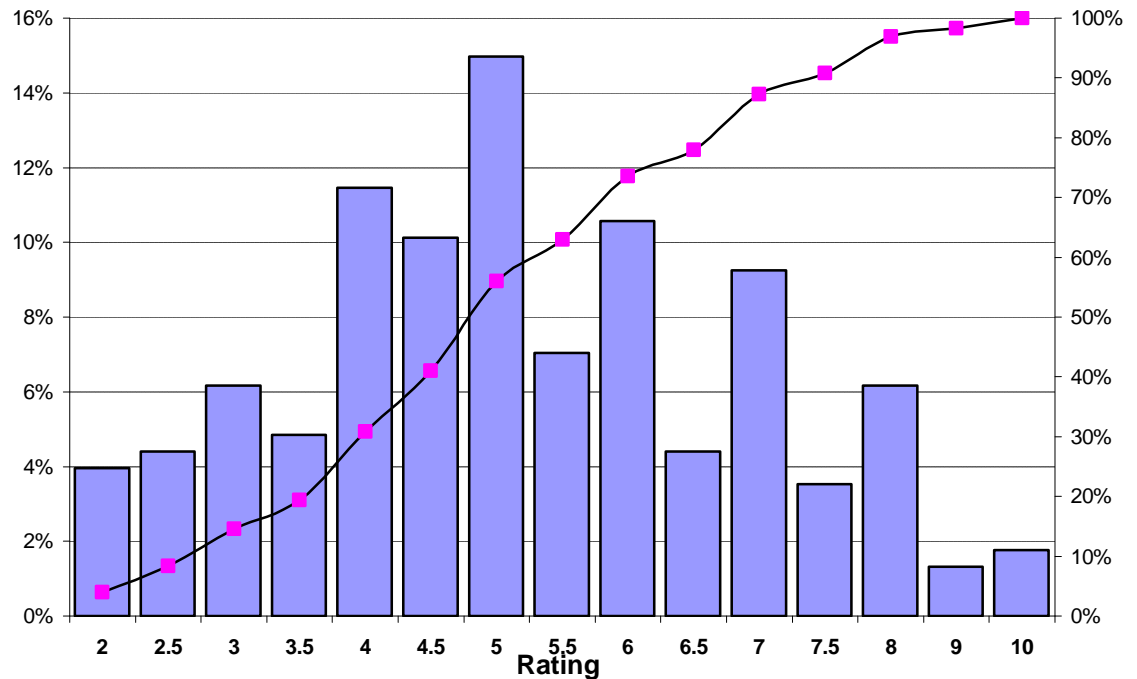
## Attachment 3 - Frequency Distributions - Intensity Ratings

The following tables and figures illustrate the frequency and percentage of Intensity ratings mentioned by this Consensus Group. The distribution of ratings is shown by a series of bars while a continuous line represents the cumulative percentage.

### Summary Report for Cognitive skill etc.

Rating	Freq.	Percentage	Cum. Percentage
2	9	4.0%	4.0%
2.5	10	4.4%	8.4%
3	14	6.2%	14.5%
3.5	11	4.8%	19.4%
4	26	11.5%	30.8%
4.5	23	10.1%	41.0%
5	34	15.0%	55.9%
5.5	16	7.0%	63.0%
6	24	10.6%	73.6%
6.5	10	4.4%	78.0%
7	21	9.3%	87.2%
7.5	8	3.5%	90.7%
8	14	6.2%	96.9%
9	3	1.3%	98.2%
10	4	1.8%	100.0%
Total	227	100.0%	

Number of missing values = 0

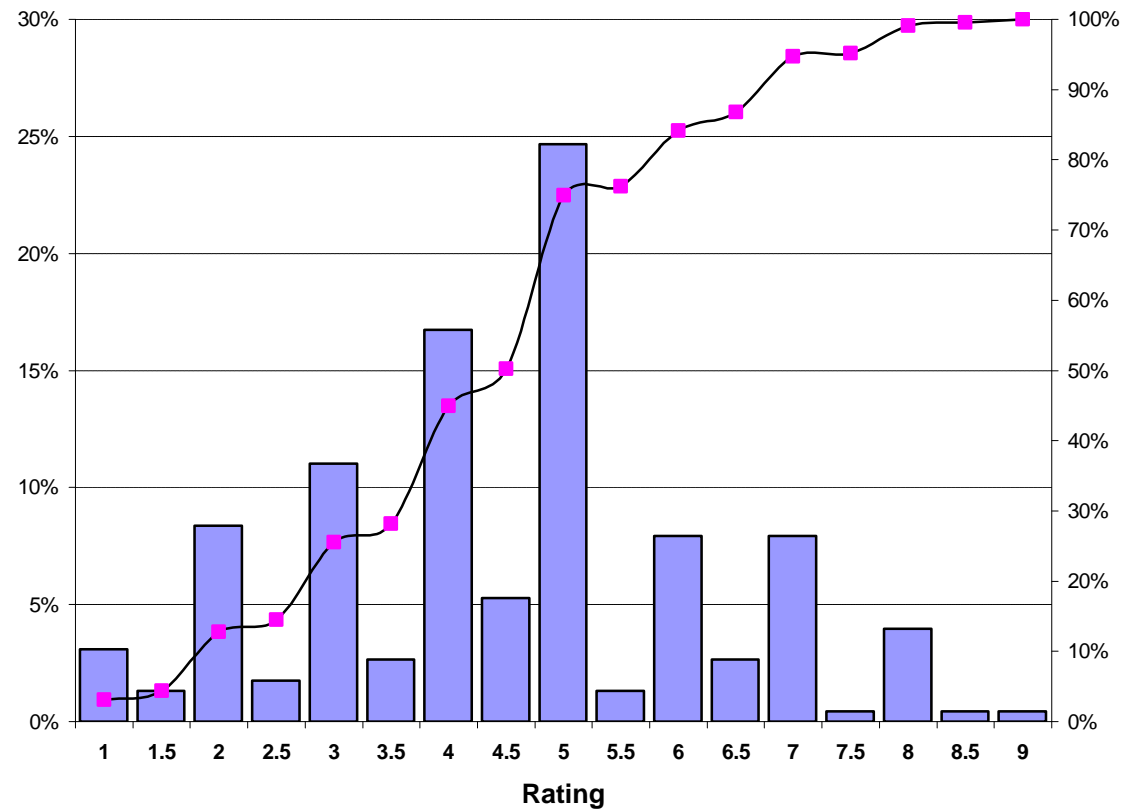


## Attachment 3 - Continued

### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum. Percentage
1	7	3.1%	3.1%
1.5	3	1.3%	4.4%
2	19	8.4%	12.8%
2.5	4	1.8%	14.5%
3	25	11.0%	25.6%
3.5	6	2.6%	28.2%
4	38	16.7%	44.9%
4.5	12	5.3%	50.2%
5	56	24.7%	74.9%
5.5	3	1.3%	76.2%
6	18	7.9%	84.1%
6.5	6	2.6%	86.8%
7	18	7.9%	94.7%
7.5	1	0.4%	95.2%
8	9	4.0%	99.1%
8.5	1	0.4%	99.6%
9	1	0.4%	100.0%
Total	227	100.0%	

Number of missing values = 0

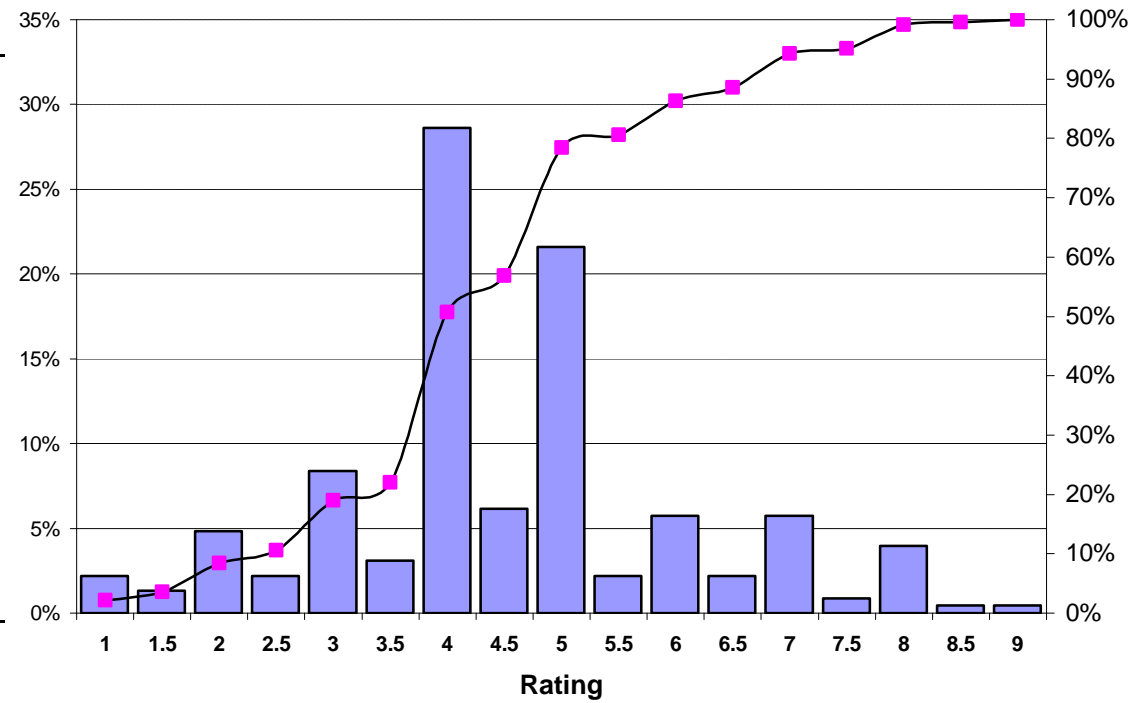




## Attachment 3 - Continued

### Summary Report for Stress

Rating	Freq.	Percentage	Cum. Percentage
1	5	2.2%	2.2%
1.5	3	1.3%	3.5%
2	11	4.8%	8.4%
2.5	5	2.2%	10.6%
3	19	8.4%	18.9%
3.5	7	3.1%	22.0%
4	65	28.6%	50.7%
4.5	14	6.2%	56.8%
5	49	21.6%	78.4%
5.5	5	2.2%	80.6%
6	13	5.7%	86.3%
6.5	5	2.2%	88.5%
7	13	5.7%	94.3%
7.5	2	0.9%	95.2%
8	9	4.0%	99.1%
8.5	1	0.4%	99.6%
9	1	0.4%	100.0%
Total	227	100.0%	



Number of missing values = 0

## Attachment 4 - Links with Other Specialties

The number of link items between Urology and the other Consensus Groups is set out below.

**Number of Links with Other Specialties**

<b>Specialty</b>	<b>Procedure Items</b>	<b>Consultation Items</b>	<b>Total Items</b>
Gen. Prac. & Emergency Med.	4	13	17
Oral and Maxillo-facial Surgery	0	16	16
Obstetrics & Gynaecology and IVF	11	5	16
General Surgery	7	65	72
Cardio Thoracic Surgery	0	5	5
Neurosurgery	0	23	23
Orthopaedic surgery	0	65	65
Paediatric Surgery	16	15	31
Plastic Surgery	1	0	1
Vascular Surgery	2	7	9
Ophthalmology	0	55	55
ENT	0	3	3
Anaesthesia	0	65	65
Dermatology	0	45	45
Paediatric / Thoracic Medicine	0	64	64
General Medicine	4	46	50
Cardiology, Renal, ICU	0	25	25
Radiation, Oncology	0	26	26
Gastroenterology	0	58	58
Neurology	0	65	65
Haematology, Medical Oncology	1	22	23
Psychiatry	0	54	54
<b>Total</b>	<b>40</b>	<b>65</b>	<b>105</b>

## Glossary

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Consultation Item	Includes the new MBS consultation items developed under RVS Stage 1 and also current MBS consultation items (Category 1 in the MBS) not covered by the new structure.
Core Item	A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of: a) being a good map b) having as high a frequency as possible c) being well spread in terms of their rank.
CPT RV	The professional work component of a CPT Relative Value as defined by the American Medical Association in "Medicare RBRVS: The Physician's Guide".
Good Map	A MBS-CPT map assessed with a Terminology Rating of 3 and Code-to-Code Rating of 2 or 4 in the MBS-CPT mapping stage of the PRS. N.B. All good maps are potential Core Items.
IRV	Imputed Relative Value. Imputed from the relationship between the rankings and the times and intensities.
Link Item	An MBS Item which has been ranked and rated by two or more Consensus Groups.
Procedure Item	All MBS items that are not Consultation Items (in principle categories 2-4 in the MBS).
Rank	Consensus Groups rank MBS items from 1 to N (where N is the number of items to be assessed by that group) according to the amount of professional work required.
Schedule Fee	The Medicare Schedule Fee as defined in the MBS at 1 July, 1997.