National Centre for Classification in Health



## 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 2:**

Vascular Surgery Opthalmology Otolaryngology Anaesthesiology Dermatology Paediatric Medicine / Thoracic Medicine Extended General Medicine Cardiology, Renal Medicine & ICU Radiation Oncology Gasteroenterology Neurology Clinical Haematology & Medical Oncology Psychiatry

### prepared for

Medicare Schedule Review Board December 2000

### CONFIDENTIAL DRAFT FOR DISCUSSION ONLY

# **Vascular Surgery**

# **Summary Status Report**

November 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 Vascular Surgery Consensus Group.

The Vascular Surgery Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 188 items. These comprised 181 procedure items and 7 consultation items.

Analysis of this information showed:

- The median ratio of Vascular Surgery's intra time estimates to NCCH's Theatre Times Database observed procedure times was 102.9%.
- 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).
- 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 6.4.
- 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 Vascular Surgery's rankings and ratings with those of the other groups.
- Consultation items were given significantly 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 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 Vascular Surgery and schedule fee was reasonable ( $R^2 = 81\%$ ).
- The correlation between the imputed relative values for Vascular Surgery and CPT RV was poor ( $R^2 = 33\%$ ).

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

<sup>&</sup>lt;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 Vascular Surgery are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 110 minutes and the mean total time was 243 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1						
	Pre	Intra	Post			
	Service	Service	Service	Total Time		
Mean	24	110	109	243		
SD	11	70	83	156		
Min	0	10	0	15		
Max	60	450	300	780		

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	Pre	Intra	Post	Total			
Times	Service	Service	Service	Time			
Procedure Items	25.0	113.2	112.9	251.1			
Consultation Items	3.7	23.6	9.3	36.6			
Total Items	24.2	109.8	109.0	243.0			

Vascular 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 Vascular Surgery's intra time estimates to the observed procedure times was 102.9%. A more detailed analysis is provided in Attachment 2.

**Proportion of Intensity** 

# 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 Vascular Surgery are set out in Table 3.1 together with associated standard deviations and ranges.

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

	Table 3.1								
	Cognitive	Technical	Stress	Total					
	Skill	Skill		Intensity					
Mean	5.4	5.4	5.4	16.2					
SD	2.1	2.5	2.6	6.9					
Min	1.0	1.0	1.0	3.0					
Max	10.0	10.0	10.0	29.0					

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.

**Average Intensities** 



#### Figure 3.1

Table 3.2							
Intensity Cognitive Technical Stress							
Ratings	Skill	Skill		Intensity			
Procedure Items	5.4	5.5	5.5	16.4			
Consultation Items	5.1	2.0	3.0	10.1			
Total Items	5.4	5.4	5.4	16.2			

A summary breakdown is also provided in Table 3.2.

<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 (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	Ranking				
	Reviewed	Highest	Lowest	Average		
Procedure	181	1	188	91.5		
Consultation	7	150	185	171.9		
Total	188	1	188	94.5		

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 Vascular Surgery Consensus Group assessed 20 link items. These comprised all 7 of their consultation items and 13 of the 181 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	Ranking					
	Reviewed	Highest	Lowest	Average		
Consultation	7	150	185	171.9		
Procedure-Link	13	17	176	129.7		
Total Link	20	17	185	144.5		
Non-Link (Procedure)	168	1	188	88.6		
Total	188	1	188	94.5		

Good maps of Vascular Surgery's items to CPT were available for 15 of their 188 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	Ranking			
	Reviewed	Highest	Lowest	Average	
Good Map	15	26	176	96.1	
Poor/No Map	173	1	188	94.4	
Total	188	1	188	94.5	

# 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 Vascular Surgery is 1 to 159.

By dividing imputed relative values by time we can impute <u>relative</u> 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 5.8. 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 6.4.

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 vascular 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 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. There was no significant difference between the imputed relative values given to good map items and those given to poor/no map items.

	Number	IRVs				
Type of Item	Reviewed	Mean <u>+</u> SD	Low High			
Consultation	7	925 <u>+</u> 446	456 1668.3			
Procedure	181	9432 <u>+</u> 8293	277.5 44232			
Link	20	3457 <u>+</u> 5453	456 21912			
Non-link	168	9789 <u>+</u> 8330	277.5 44232			
Good Map	15	7741 <u>+</u> 5405	798 16836			
Poor/No Map	173	9234 <u>+</u> 8500	277.5 44232			
Total	188	9115 <u>+</u> 8295	277.5 44232			

Table 5	5.1
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A plot of Vascular Surgery's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is reasonable  $(R^2 = 0.81)^4$ . There are a number of outliers which should be investigated. These comprise MBS item numbers 33148, 33151 and 33845.

 $^4\,$  An R  $^2$  value of 0.81 means that the line explains 81% of the variation.





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 78% of the variation as against 81% previously. There are again a number of outliers which should be investigated. These are MBS item numbers 32757, 35200 and 35321 in addition to 33845 which was mentioned previously.





A plot of Vascular Surgery's IRVs against CPT RV is set out in Figure 5.3. The fit is very poor ( $R^2$ = 0.33). There are a number of outliers which should be investigated. These are MBS item numbers 34157, 44370 and 44373.



A log/log plot is also provided (Figure 5.4). The fit is still poor explaining 55% of the variation as against 33% previously. There are two outliers which should be investigated. These are MBS item number 44358 in addition to MBS item number 34157, 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**



## **Attachment 1 - Continued**

#### **Summary Report for Intra-Service Time**

Т	ime	Freq.	Percentage	Cum.
				Percentage
	10	1	0.5%	0.5%
	15	4	2.1%	2.7%
	20	6	3.2%	5.9%
	30	13	6.9%	12.8%
	40	5	2.7%	15.4%
	45	12	6.4%	21.8%
	50	1	0.5%	22.3%
	60	19	10.1%	32.4%
	68	2	1.1%	33.5%
	70	1	0.5%	34.0%
	75	6	3.2%	37.2%
	90	25	13.3%	50.5%
	100	3	1.6%	52.1%
	105	6	3.2%	55.3%
	120	19	10.1%	65.4%
	130	1	0.5%	66.0%
	135	9	4.8%	70.7%
	150	21	11.2%	81.9%
	170	1	0.5%	82.4%
	180	12	6.4%	88.8%
	200	2	1.1%	89.9%
	210	10	5.3%	95.2%
	240	4	2.1%	97.3%
	270	1	0.5%	97.9%
	300	2	1.1%	98.9%
	420	1	0.5%	99.5%
	450	11	0.5%	100.0%
Total		188	100.0%	



Number of missing values = 0

### **Attachment 1 - Continued**

#### **Summary Report for Post-Service Time**



Number of missing values = 0

#### COMPARISON OF VASCULAR SURGERY (VASC) INTRA TIME ESTIMATES WITH OTHER ESTIMATES

Time	e 0'		OTHER TIME ESTIMATE (OTE)		Average Minu	Average Time in Minutes	
	ID	Туре	Definition of Time *	common	VASC	OTE	VASC/OTE
Ŧ	H4	Priv	Knife to Skin -to- Dressing Applied	31	81.1	91.5	88.7
.so	H6	Priv	Knife to Skin -to- Drapes Removed	5	72.0	54.9	131.2
-	H11	Priv	Pt Prepped -to- Drapes Removed	25	100.8	135.8	74.2
	H1	Priv	Pt Positioned -to- Drapes Removed	14	78.2	80.5	97.1
	по H10	Priv	Pt Positioned -to- Drapes Removed	35	99.3 85 9	01.0	121.7
*	H13	Priv	Pt Positioned -to- Drapes Removed	6	60.0	55.1	108.9
IME	H15	Priv	Pt Positioned -to- Drapes Removed	62	102.1	81.4	125.5
TION TI (OPT)	H16	Pub	Pt Positioned -to- Dressing Applied	75	109.0	105.9	102.9
	H17	Pub	Surgeon with Pt -to- Drapes Removed	90	108.5	108.2	100.3
EAT 00	H18	Priv	Pt Positioned -to- Drapes Removed	39	95.3	91.4	104.2
Ë	H19	Pub	Pt Positioned -to- Dressing Applied	53	106.3	115.7	91.9
Ъ		Pub	Pt Positioned -to- Dressing Applied	47	105.7	95.1	111.2
		PIIV Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	43	94.5	109.3	88.5
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Remove	13	94.5	95.5	102.7
	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	36	97.4	87.4	111.4
01	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	48	100.0	108.7	92.0
Ш	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	8	50.6	51.0	99.4
Σ	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	7	60.0	63.3	94.8
N R	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	63	102.9	88.3	116.5
DT T	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	77	108.1	114.3	94.6
A S	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	91	108.8	116.7	93.2
PE	H18 H10	Priv	Pt Positioned -to- Trans. to Recovery Stall	41 70	93.8	98.4	95.3
0	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	47	99.0 105.7	107.2	98.7
	CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staf	47	94.5	114.8	82.3
	H1	Priv	Prep. Anaesto- Drapes Removed	14	80.4	112.5	71.5
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	34	76.5	133.2	57.4
	H6	Priv	Prep. Anaesto- Drapes Removed	5	72.0	66.1	109.0
ME	H8	Priv	Prep. Anaesto- Drapes Removed	35	99.3	106.3	93.4
F	H10	Priv	Prep. Anaesto- Drapes Removed	18	86.1	100.0	86.1
Ĕ	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	8	56.3	70.8	79.5
A HE	н15 H16	Pliv	Pren Anges -to- Dressing Applied	00 77	99.9	90.0	101.5
ST (	H17	Pub	Prep. Anaesto- Drapes Removed	90	106.8	141.5	75.5
AE	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	41	93.8	110.7	84.8
AN	H19	Pub	Prep. Anaesto- Dressing Applied	56	104.9	150.5	69.7
	H20	Pub	Prep. Anaesto- Dressing Applied	47	105.7	124.9	84.7
	CANS	Pub & Priv	Prep. Anaesto- Surg.Leaves Pt	47	94.5	117.6	80.4
	Deloitte	Pub & Priv	Induction of Anaesto- Drapes Remove	14	93.9	106.9	87.9
	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	172	117.0	166.6	70.2
	H5	Priv Driv/Dov	Prep. Anaes -to- Trans. to Recovery Staff	45	96.7	138.2	70.0
		Priv/Day	Prep. Anaesto- Trans. to Recovery Stall	0	97 /	111 3	87.5
5	H9A	Priv	Prep. Anaesto- Trans. to Recovery Staff	49	99.8	124.8	80.0
M	H9B	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff		50.6	63.0	80.3
L L L	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	27	101.1	166.0	60.9
	H12	Pub	Prep. Anaesto- Trans. to Recovery Staff	9	75.0	116.0	64.7
E A	H14	Pub	Prep. Anaesto- Trans. to Recovery Staff	98	100.8	139.9	72.0
LS")	H15	Priv	Induction of Anaesto- Trans. to Recovery Staff	66	100.7	105.2	95.7
IAI	H16	Pub	Prep. Anaesto- Trans. to Recovery Staff	//	108.1	137.8	78.5
A	H17 H10	Pub	Prep. Anaesto- Trans. to Recovery Stall	90 71	106.8	150.4	71.0
	H20	Pub	Prep. Anaes -to- Trans. to Recovery Staff	47	99.4 105.7	137.3	77.0
	CANS	Pub & Priv	Prep. Anaesto- Trans. to Recovery Staff	47	94.5	125.6	75.2
	WAGroup	Priv	Induction of Anaesto- Trans. to Recovery Sta	112	113.3	129.2	87.7
	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	54	97.8	111.0	88.2
ш	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	4	71.3	96.9	73.5
TR	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	27	101.1	187.4	53.9
Ę	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	8	56.3	73.9	76.1
돋보	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	65	100.4	125.8	79.8
ĭ, r	H10	Pub	Anaesthetist with PT-TO- Trans.to Recovery Staff	41	93.8	118.5	79.2
Β	C'mix	Pub	Anaesthetist with Pt -to- Trans to Recovery Staff	20	74 /	174.2	00.2 157 2
F	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	32	64.5	59.1	109.1
	C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staf	4	52.5	39.6	132.5

\* Definition of Time

- see Attachment A

\*\* Median ratio of VASC intra time estimates to OPT Unweighted = 102.9 %

Weighted (for number of items in common) = 102.9 %

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

PATHWAYS FOR SURGEON AND			PT ENTERS ANAESTHETIC BAY OR OPERATING ROOM		START OP TIME						END OP TIME		XFER TO RECOV	XFER TO RECOV				
		TIST	PT ENTERS OP SUITE	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	Reversal of anaes	Xfer of Pt to Recov. Staff	XFER FROM RECOV
Hosp4	H4OST	Priv										L						
Hosp6	H6OST	Priv																
Hosp11	H11OST	Priv																
Hosp1 Hosp8	H1OPT	Priv																
Hosp0 Hosp10	H10OPT	Priv							1				1					
Hosp13	H13OPT	Priv							1									
Hosp15	H15OPT	Priv							1									
Hosp16	H16OPT	Pub							1									
Hosp17 Hosp18	H17OPT	Pub																
Hosp19	H19OPT	Pub																
Hosp20	H20OPT	Pub																
APHA	APHAOPT	Priv																
CANS	CANSOPT	Pub & Priv													_			
Deloitte Hosp8	H8OPT2	Pub & Priv							-									
Hosp9A	H9AOPT2	Priv							1									
Hosp9B	H9BOPT2	Priv/Day							i i									
Hosp13	H13OPT2	Priv																
Hosp15	H15OPT2	Priv							1	1								
Hosp16	H160PT2	Pub																
Hosp18	H180PT2	Priv																
Hosp19	H19OPT2	Pub							1	1								
Hosp20	H20OPT2	Pub																
CANS	CANSOPT2	Pub & Priv														1		
Hosp1	H1OAT	Priv																
Hosp6	HEOAT	Priv																
Hosp8	H8OAT	Priv																
Hosp10	H10OAT	Priv											- I					
Hosp13	H13OAT	Priv																
Hosp15	H15OAT	Pub																
Hosp17	H17OAT	Priv																
Hosp18	H18OAT	Pub																
Hosp19	H19OAT	Pub																
Hosp20	H20OAT	Pub & Priv																
CAnS Deloitte		Pub & Priv																
MBS	MBSOAT2	Pub & Priv																
Hosp5	H5OAT2	Priv																
Hosp7	H7OAT2	Priv/Day																
Hosp8	H8OAT2	Priv																
Hosp9A	H9BOAT2	Priv/Dav																
Hosp11	H11OAT2	Priv																
Hosp12	H12OAT2	Pub																
Hosp14	H14OAT2	Pub																
Hosp15	H15OAT2	Priv																
Hosp16	H170AT2	Pub																
Hosp19	H19OAT2	Pub																
Hosp20	H20OAT2	Pub																
CANS	CANSOAT2	Pub & Priv																
WAGroup	WAOAT2	Priv																
Hosp2	H3THT	Pub																
Hosp11	H11THT	Pub																
Hosp13	H13THT	Priv																
Hosp15	H15THT	Priv																
Hosp18	H18THT	Priv																
C'mix -Pub	СМХРШТНТ	Day & Othe																
C'mix -Pte	CMXPVTHT	Priv																
C'mix-oth	СМХОТТНТ	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.



### **Attachment 3 - Continued**

#### Summary Report for Technical skill etc.



### **Attachment 3 - Continued**

#### **Summary Report for Stress**



# **Attachment 4 - Links with Other Specialties**

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

Creation	Procedure	Consultation	Total
Specialty	ltems	Items	Items
Gen. Prac. & Emergency Med.	1	7	8
Oral and Maxillo-facial Surgery	0	6	6
Obstetrics / Gynaecology	0	0	0
General Surgery	4	7	11
Cardio Thoracic Surgery	1	0	1
Neurosurgery	2	7	9
Orthopaedic surgery	2	7	9
Paediatric Surgery	0	6	6
Plastic Surgery	1	0	1
Urology	2	0	2
Ophthalmology	0	0	0
ENT	0	3	3
Anaesthesia	0	7	7
Dermatology	0	7	7
Paediatric / Thoracic Medicine	0	7	7
General Medicine	0	7	7
Cardiology, Renal, ICU	0	0	0
Radiation, Oncology	0	7	7
Gastroenterology	0	7	7
Neurology	0	7	7
Haematology, Medical Oncology	0	7	7
Psychiatry	0	7	7
Total	13	7	20

#### Number of Links with Other Specialties

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

Opthalmology

## **Summary Status Report**

February 2000

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 Opthalmology Consensus Group.

The Opthalmology Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 228 items. These comprised 171 procedure items and 57 consultation items.

Analysis of this information showed:

- The median ratio of Opthalmology's intra time estimates to NCCH's Theatre Time Database observed procedure times was 129.2%. 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 3.8.
- 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 relativevalues<sup>1</sup> than procedure items.
- The link items were given very much lower imputed relative values than the non-link items.
- The imputed relative values given to good map items were very much higher than those given to the poor/no map items.
- The correlation between the imputed relative values for Opthalmology and schedule fee was good ( $R^2 = 95\%$ ).
- The correlation between the imputed relative values for Opthalmology and CPT RV was reasonable ( $R^2 = 72\%$ ).

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

<sup>&</sup>lt;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 Opthalmology are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 46 minutes and the mean total time was 84 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1

	Table 2.1								
	Pre	Intra	Post						
	Service	Service	Service	Total Time					
Mean	16	46	22	84					
SD	10	33	14	53					
Min	2	5	0	13					
Max	35	180	60	275					

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	Pre	Intra	Post	Total			
Times	Service	Service	Service	Time			
Procedure Items	20.1	50.3	24.7	95.1			
Consultation Items	5.0	31.1	14.1	50.2			
Total Items	16.4	45.5	22.0	83.9			

Opthalmology'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 Opthalmology's intra time estimates to the observed procedure times was 129.2%. 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 Opthalmology are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 4.5 for cognitive skill, 4.1 for technical skill and 3.9 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3

Table 3.1								
	Cognitive	Technical	Stress	Total				
	Skill	Skill		Intensity				
Mean	4.5	4.1	3.9	12.5				
SD	1.8	2.3	2.4	6.3				
Min	1.6	0.6	0.9	3.5				
Max	9.9	9.9	9.8	29.6				

A graphical presentation of these mean ratings together with the percentage apportionments of total intensity are 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								
Intensity	Cognitive	Technical	Stress	Total				
Ratings	Skill	Skill		Intensity				
Procedure Items	4.8	4.7	4.8	14.3				
Consultation Items	3.7	2.2	1.2	7.1				
Total Items	4.5	4.1	3.9	12.5				

<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 (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		Ranking	
	Reviewed	Highest	Lowest	Average
Procedure	171	1	223	98.2
Consultation	57	102	228	163.3
Total	228	1	228	114.5

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 Opthalmology Consensus Group assessed 74 link items. These comprised 55 of the 57 consultation items and 19 of the 171 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	e <b>4.2</b>			
Type of Item	Number		Ranking		
	Reviewed	Highest	Lowest	Average	
Consultation-Link	55	102	228	163.9	
Procedure-Link	19	33	221	122.8	
Total Link	74	33	228	153.4	
Consultation - Non-Link	2	146	147	146.5	
Procedure - Non-link	152	1	223	95.2	
Total Non-Link	154	1	223	95.8	
Total	228	1	228	114.5	

Good maps of Opthalmology's items to CPT were available for 60 of their 228 items. A breakdown of the ranks given to these good map items and to the poor/no map items is se out in Table 4.3. The ranks given to the good map items were very much higher than those given to the poor/no map items.

Table 4.3							
Type of Item	Number	Ranking					
	Reviewed	Highest	Lowest	Average			
Good Map	60	3	223	86.5			
Poor/No Map	168	1	228	124.5			
Total	228	1	228	114.5			

# 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 Ophthalmology is 1 to 49.9.

By dividing imputed relative values by time we can impute <u>relative</u> rates of pay. Depending on intensity alone (i.e. disregarding any deviation in the composition of times, pre: intra: post) the potential range in relative rates of pay is 1 to 4.1. Depending on both variations in intensity and on variations in the composition of times (pre: intra: post), the actual range in relative rates of pay is 1 to 3.8.

Opthalmology is the only specialty whose actual range in relative rates of pay is lower than the potential range depending on intensity alone. This has occurred as a result of a higher proportion of intra time being allocated to the lowest intensity items than ot the highest.

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

<sup>&</sup>lt;sup>3</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 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) and the good map items were given imputed relative values that were very much higher than those given to poor/no map items (t tests, p < 0.001).

	Number	IRVs				
Type of Item	Reviewed	Mean <u>+</u>	SD	Low	High	
Procedure	171	299 <u>+</u>	234	31	1096	
Consultation	57	98 <u>+</u>	51	22	190	
Link	74	124 <u>+</u>	97	22	497	
Non-link	154	309 <u>+</u>	239	31	1096	
Good Map	60	335 <u>+</u>	234	31	977	
Poor/No Map	168	218 <u>+</u>	209	22	1096	
Total	228	249 <u>+</u>	222	22	1096	

#### Table 5.1

A plot of Opthalmology's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is good  $(R^2 = 0.95)^4$ . However there are three outliers, MBS item numbers 42536, 42539 and 42755 which should be investigated.

 $^4$  An R  $^2$  value of 0.95 means that the line explains 95% 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 explains 90% of the variation as against 95% previously. There is one outlier, MBS item number 10815 which should be investigated.



Figure 5.2
A plot of Opthalmology's IRVs against CPT RV is set out in Figure 5.3. The fit is reasonable ( $R^2$ = 0.72) and the results are consistent with a simple proportional relationship between the scales. There are seven outliers, MBS item numbers 42608, 42689, 42731, 42767, 42773, 42803 and 42809 which should be investigated.



A log/log plot is also provided (Figure 5.4). The fit explains 71% of the variation as against 72% previously. There are five outliers which should be investigated. These are MBS item numbers11212 and 42827 in addition to 42689, 42731 and 42803 which were mentioned previously.





### **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



## **Attachment 1 - Continued**

### Summary Report for Intra Service Time

Time	Freq	Percentage	Cum. Percentage
5	8	3.5%	3.5%
6	2	0.9%	4.4%
8	4	1.8%	6.1%
10	22	9.6%	15.8%
15	16	7.0%	22.8%
16	4	1.8%	24.6%
17	1	0.4%	25.0%
18	1	0.4%	25.4%
19	1	0.4%	25.9%
20	16	7.0%	32.9%
21	1	0.4%	33.3%
25	2	0.9%	34.2%
30	23	10.1%	44.3%
35	5	2.2%	46.5%
40	5	2.2%	48.7%
45	23	10.1%	58.8%
50	5	2.2%	61.0%
55	4	1.8%	62.7%
60	34	14.9%	77.6%
61	1	0.4%	78.1%
65	5	2.2%	80.3%
70	1	0.4%	80.7%
75	5	2.2%	82.9%
80	12	5.3%	88.2%
85	5	2.2%	90.4%
90	8	3.5%	93.9%
95	1	0.4%	94.3%
100	1	0.4%	94.7%



#### (continued next page)

105 110	3 1	1.3% 0.4%	96.1% 96.5%
120	2	0.9%	97.4%
122	2	0.9%	98.2%
150	1	0.4%	98.7%
160	1	0.4%	99.1%
175	1	0.4%	99.6%
180	1	0.4%	100.0%
Total	228	100.0%	

## **Attachment 1 - Continued**

### Summary Report for Post Service Time

Time		Freq	Percentage	Cum. Percentage																							
	0	6	2.6%	2.6%																							
	4	3	1.3%	3.9%	25%																						⊤ 100%
	5	11	4.8%	8.8%																				_	_		
	6	3	1.3%	10.1%																			_	<b>/</b>		l	- 90%
	7	8	3.5%	13.6%																						l	
	8	2	0.9%	14.5%	20%																						80%
1	10	25	11.0%	25.4%	2070																	X					0078
	11	3	1.3%	26.8%																		/					- 70%
1	13	6	2.6%	29.4%																							
1	15	11	4.8%	34.2%	15%																	_					60%
	16	13	5.7%	39.9%															/								
1	17	8	3.5%	43.4%																						l	- 50%
	18	1	0.4%	43.9%								_														l	
	19	3	1.3%	45.2%	10%												_		_			_					40%
2	20	35	15.4%	60.5%										_												l	
2	22	2	0.9%	61.4%									_													l	- 30%
2	25	6	2.6%	64.0%								+														l	
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#### COMPARISON OF OPTHALMOLOGY (OPH) INTRA TIME ESTIMATES WITH OTHER ESTIMATES

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NOCEH10Pit Positioned to Dressing Applied3002.4H17PubSurgeon with Pt -to- Drapes Removed3657.0H18PrivPt Positioned -to- Drapes Removed6759.3H19PubPt Positioned -to- Dressing Applied2159.8H20PubPt Positioned -to- Dressing Applied3962.7APHAPrivSurgeon with Pt -to- Surgeon Leaves Pt4257.0CANSPub & PrivSurgeon with Pt -to- Surgeon Leaves Pt4662.3DeloittePub & PrivPt Positioned -to- Drapes Remover1656.6H8PrivPt Positioned -to- Trans. to Recovery Staff2945.0H9APrivPt Positioned -to- Trans. to Recovery Staff3660.4H13PrivPt Positioned -to- Trans. to Recovery Staff2048.8	32.8 40.8 39.3 46.2 38.1 51.0 49.2 42.4 39.2	118.2 139.6 150.7 129.2 164.8 111.7
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PubPt Positioned -to- Dressing Applied2159.8H20PubPt Positioned -to- Dressing Applied3962.7APHAPrivSurgeon with Pt -to- Surgeon Leaves Pt4257.0CANSPub & PrivSurgeon with Pt -to- Surgeon Leaves Pt4662.3DeloittePub & PrivPt Positioned -to- Drapes Remover1656.6H8PrivPt Positioned -to- Trans. to Recovery Staff2945.0H9APrivPt Positioned -to- Trans. to Recovery Staff145.0H9BPriv/DayPt Positioned -to- Trans. to Recovery Staff3660.4H13PrivPt Positioned -to- Trans. to Recovery Staff2048.8	46.2 38.1 51.0 49.2 42.4 39.2	129.2 164.8 111.7
H20PubPt Positioned -to- Dressing Applied3962.7APHAPrivSurgeon with Pt-to- Surgeon Leaves Pt4257.0CANSPub & PrivSurgeon with Pt-to- Surgeon Leaves Pt4662.3DeloittePub & PrivPt Positioned -to- Drapes Remover1656.6H8PrivPt Positioned -to- Trans. to Recovery Staff2945.0H9APrivPt Positioned -to- Trans. to Recovery Staff145.0H9BPriv/DayPt Positioned -to- Trans. to Recovery Staff3660.4H13PrivPt Positioned -to- Trans. to Recovery Staff2048.8	38.1 51.0 49.2 42.4 39.2	164.8
APHA       Priv       Surgeon with Pt -to- Surgeon Leaves Pt       42       57.0         CANS       Pub & Priv       Surgeon with Pt -to- Surgeon Leaves Pt       46       62.3         Deloitte       Pub & Priv       Pt Positioned -to- Drapes Remover       16       56.6         H8       Priv       Pt Positioned -to- Trans. to Recovery Staff       29       45.0         H9A       Priv       Pt Positioned -to- Trans. to Recovery Staff       1       45.0         H9B       Priv/Day       Pt Positioned -to- Trans. to Recovery Staff       36       60.4         H13       Priv       Pt Positioned -to- Trans. to Recovery Staff       20       48.8	51.0 49.2 42.4 39.2	111./
Very Surgeon with Pt -to- Surgeon Leaves Pt       46       62.3         Deloitte       Pub & Priv       Pt Positioned -to- Drapes Remover       16       56.6         H8       Priv       Pt Positioned -to- Trans. to Recovery Staff       29       45.0         H9A       Priv       Pt Positioned -to- Trans. to Recovery Staff       1       45.0         H9B       Priv/Day       Pt Positioned -to- Trans. to Recovery Staff       36       60.4         H13       Priv       Pt Positioned -to- Trans. to Recovery Staff       20       48.8	49.2 42.4 39.2	1 1 2 0
H8         Priv         Pt Positioned -to- Trans. to Recovery Staff         29         45.0           H9A         Priv         Pt Positioned -to- Trans. to Recovery Staff         1         45.0           H9B         Priv/Day         Pt Positioned -to- Trans. to Recovery Staff         36         60.4           H13         Priv         Pt Positioned -to- Trans. to Recovery Staff         20         48.8	39.2	120.0
H9APrivPt Positioned -to- Trans. to Recovery Staff145.0H9BPriv/DayPt Positioned -to- Trans. to Recovery Staff3660.4H13PrivPt Positioned -to- Trans. to Recovery Staff2048.8		114.9
H9B         Priv/Day         Pt Positioned -to- Trans. to Recovery Staff         36         60.4           H13         Priv         Pt Positioned -to- Trans. to Recovery Staff         20         48.8	60.0	75.0
H13 Priv Pt Positioned to- Trans. to Recovery Staff 20 48.8	38.1	158.5
	47.0	103.7
Z N H15 Priv Pt Positioned -to- Trans. to Recovery Staff 9 40.0	32.0 58.4	125.2
H17 Pub Surgeon with Pt -to- Trans. to Recovery Staff 36 56.8	46.4	122.4
H18 Priv Pt Positioned -to- Trans. to Recovery Staff 68 58.3	41.7	139.9
H19 Pub Pt Positioned -to- Trans. to Recovery Staff 43 62.5	47.3	132.2
H20 Pub Pt Positioned -to- Trans. to Recovery Staff 41 62.4	44.4	140.4
H1 Priv Pren Anales to Dranes Removed 2 50.0	53.U	115.5
H4 Priv Anaesthetist with Pt -to- Dressing Applied 46 56.0	56.7	98.8
H6 Priv Prep. Anaesto- Drapes Removed 2 50.0	51.5	97.1
H8 Priv Prep. Anaesto- Drapes Removed 29 45.0	44.7	100.8
H10     Priv     Prep. Anaesto- Drapes Removed     7     42.1	49.7	84.8
P F H13 Priv Anaestnetist with Pt -to- Drapes Removed 20 49.3	56.0 36.3	88.0 108.5
HIGOLOGIO Anaes - to- Drapes Removed 50 53.4	67.9	94.7
H17 Pub Prep. Anaesto- Drapes Removed 40 61.6	68.2	90.3
H18 Priv Anaesthetist with Pt -to- Drapes Removed 68 58.8	46.8	125.6
◄ H19 Pub Prep. Anaesto- Dressing Applied 23 63.3	66.0	96.0
H20 Pub Prep. Anaesto- Dressing Applied 40 63.4	55.5 60.4	114.3
Deloitte Pub & Priv Induction of Anaesto- Drapes Remove 16 56.6	51.8	101.3
MBS Pub & Priv Anaesthetic Time Units as per MBS Schedule 143 56.5	69.1	81.7
H5 Priv Prep. Anaes -to- Trans. to Recovery Staff 18 49.9	49.0	101.8
H7 Priv/Day Prep. Anaesto- Trans. to Recovery Staff 13 55.0	43.0	128.0
N H8 Priv Prep. Anaes -to- Trans. to Recovery Stall 30 46.4	52.2 80.0	56.3
H9B Priv/Day Prep. Anaesto- Trans. to Recovery Staff 38 61.1	59.7	102.4
H11 Priv Prep. Anaes -to- Trans. to Recovery Staff 4 65.3	75.0	87.0
H12 Pub Prep. Anaesto- Trans. to Recovery Staff 2 27.5	35.6	77.3
Image: High state state     High state     High state     High state       High state     High state     High state     High state     High state       High state     High state     High state     High state     High state       High state     High state     High state     High state     High state	68.3	88.8
HIS PIN INDUCION OF Anales, -to- Trans, to Recovery Staff 50 64.3	38.0	87.4
H17 Pub Prep. Anaesto- Trans. to Recovery Staff 40 63.3	75.0	84.4
H19 Pub Prep. Anaes -to- Trans. to Recovery Staff 46 61.6	64.1	96.2
H20 Pub Prep. Anaesto- Trans. to Recovery Staff 40 63.4	60.7	104.4
CANS Pub & Priv Prep. Anaesto- Trans. to Recovery Staff 48 61.2	65.3	93.7
H2 Priv Appendent Priv Appendent Prive Appende	44.0	104.9
H3 Priv Anaesthetist with Pt -to- Trans.to Recovery Staff 8 35.0	43.0	81.5
H11         Priv         Anaesthetist with Pt -to- Trans. from Recovery         4         65.3	91.0	71.7
H13 Priv Anaesthetist with Pt -to- Trans.to Recovery Staff 20 49.3	59.2	83.3
H15         Priv         Anaesthetist with Pt -to- Trans.to Recovery Staff         7         44.3	60.9	72.8
<b>Z L</b> H18   Priv   Anaesthetist with Pt -to- Trans.to Recovery Staff 70 59.3	51.3	115.6
W         Pub         Pt. Annovation of the state of th	37.8	/8.9 135 7
Cmix Priv Anaesthetist with Pt -to- Trans.to Recovery Staff 105 56.3	48.0	117.3
C'mix Othe Day & Other Anaesthetist with Pt -to- Trans.to Recovery Staf 16 50.6	38.8	120.4

\* Definition of Time

- see Attachment A

\*\* Median ratio of OPH intra time estimates to OPT Unweighted = 133.5 %

Weighted (for number of items in common) = 129.2 %

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

PATHWAYS FOR SURGEON AND			PT ENTERS ANAESTHETIC BAY OR OPERATING ROOM		START OP TIME								END C	PTIME	XFER TO RECOV			
		TIST	PT ENTERS OP SUITE	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	Reversal of anaes	Xfer of Pt to Recov. Staff	XFER FROM RECOV
Hosp4	H4OST	Priv											I					
Hosp6	H6OST	Priv																
Hosp11	H11OST	Priv																
Hosp1	H1OPT	Priv																
Hosp10	H10OPT	Priv							1				1					
Hosp13	H13OPT	Priv							1 - C									
Hosp15	H15OPT	Priv							1									
Hosp16	H16OPT	Pub							1									
Hosp17	H17OPT	Pub																
Hosp19	H19OPT	Pub																
Hosp20	H20OPT	Pub																
APHA	APHAOPT	Priv																
CANS	CANSOPT	Pub & Priv																
Deloitte Hosp8		Pub & Priv																
Hosp9A	H9AOPT2	Priv							1									
Hosp9B	H9BOPT2	Priv/Day							i –									
Hosp13	H13OPT2	Priv																
Hosp15	H15OPT2	Priv							1	1								
Hosp16	H160PT2	Pub																
Hosp18	H180PT2	Priv																
Hosp19	H19OPT2	Pub							1	1								
Hosp20	H20OPT2	Pub																
CANS	CANSOPT2	Pub & Priv														1		
Hosp1	H1OAT	Priv																
Hosp6	HEOAT	Priv																
Hosp8	H8OAT	Priv																
Hosp10	H10OAT	Priv											I					
Hosp13	H13OAT	Priv																
Hosp15	H15OAT	Pub																
Hosp17	H17OAT	Priv																
Hosp18	H18OAT	Pub																
Hosp19	H19OAT	Pub																
Hosp20	H20OAT	Pub & Priv			-													
Deloitte		Pub & Priv																
MBS	MBSOAT2	Pub & Priv																
Hosp5	H5OAT2	Priv																
Hosp7	H7OAT2	Priv/Day			-													
Hosp8	H8OA12	Priv			-													
Hosp9B	H9BOAT2	Priv/Day																
Hosp11	H11OAT2	Priv																
Hosp12	H12OAT2	Pub																
Hosp14	H14OAT2	Pub																
Hosp15 Hosp16	H150AT2	Priv																
Hosp17	H17OAT2	Pub																
Hosp19	H19OAT2	Pub																
Hosp20	H20OAT2	Pub																
CANS	CANSOAT2	Pub & Priv																
Hosp2	H2THT	Priv																
Hosp3	НЗТНТ	Pub																
Hosp11	H11THT	Pub																
Hosp13	H13THT	Priv																
Hosp15	H15THT	Priv																
Hosp18	H19THT	Day & Othe	er															
C'mix -Pub	CMXPUTHT	Priv																
C'mix -Pte	CMXPVTHT	Priv																
CATEN YAOTH	- ONIXOTTHE	Bulkara at	drt/ond +i	mon are o	ofined by	> 1 pothu	ou time or	otion										

### **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
1.6	1	0.4%	0.4%
1.7	6	2.6%	3.1%
1.8	1	0.4%	3.5%
1.9	4	1.8%	5.3%
2.0	7	3.1%	8.3%
2.1	1	0.4%	8.8%
2.2	2	0.9%	9.6%
2.4	2	0.9%	10.5%
2.5	1	0.4%	11.0%
2.6	3	1.3%	12.3%
2.7	3	1.3%	13.6%
2.8	1	0.4%	14.0%
2.9	2	0.9%	14.9%
3.0	4	1.8%	16.7%
3.1	4	1.8%	18.4%
3.3	6	2.6%	21.1%
3.4	2	0.9%	21.9%
3.5	26	11.4%	33.3%
3.6	11	4.8%	38.2%
3.7	7	3.1%	41.2%
3.8	15	6.6%	47.8%
4.0	14	6.1%	53.9%
4.1	6	2.6%	56.6%
4.2	5	2.2%	58.8%
4.3	6	2.6%	61.4%
4.4	3	1.3%	62.7%
4.5	3	1.3%	64.0%
4.7	5	2.2%	66.2%



4.8	3	1.3%	67.5%
4.9	2	0.9%	68.4%
5.0	5	2.2%	70.6%
5.1	1	0.4%	71.1%
5.2	3	1.3%	72.4%
5.5	6	2.6%	75.0%
5.6	1	0.4%	75.4%
5.7	1	0.4%	75.9%
5.8	2	0.9%	76.8%
6.1	2	0.9%	77.6%
6.2	2	0.9%	78.5%
6.3	1	0.4%	78.9%
6.4	7	3.1%	82.0%
6.5	4	1.8%	83.8%
6.8	10	4.4%	88.2%
7.0	4	1.8%	89.9%
7.2	1	0.4%	90.4%
7.3	1	0.4%	90.8%
7.4	3	1.3%	92.1%
7.6	3	1.3%	93.4%
7.8	3	1.3%	94.7%
8.0	3	1.3%	96.1%
8.4	1	0.4%	96.5%
8.9	1	0.4%	96.9%
9.0	1	0.4%	97.4%
9.1	1	0.4%	97.8%
9.2	1	0.4%	98.2%
9.4	2	0.9%	99.1%
9.7	1	0.4%	99.6%
9.9	1	0.4%	100.0%
Total	228	100.0%	

## **Attachment 3 - Continued**

### Summary Report for Technical skill etc.



4.3	1	0.4%	62.7%
4.4	5	2.2%	64.9%
4.5	3	1.3%	66.2%
4.6	5	2.2%	68.4%
4.7	2	0.9%	69.3%
4.8	2	0.9%	70.2%
4.9	2	0.9%	71.1%
5.0	3	1.3%	72.4%
5.1	4	1.8%	74.1%
5.2	1	0.4%	74.6%
5.4	1	0.4%	75.0%
5.5	4	1.8%	76.8%
5.6	3	1.3%	78.1%
5.7	1	0.4%	78.5%
5.8	1	0.4%	78.9%
5.9	2	0.9%	79.8%
6.0	3	1.3%	81.1%
6.2	2	0.9%	82.0%
6.3	1	0.4%	82.5%
6.5	1	0.4%	82.9%
6.9	1	0.4%	83.3%
7.3	2	0.9%	84.2%
7.4	7	3.1%	87.3%
7.5	3	1.3%	88.6%
7.6	1	0.4%	89.0%
7.7	1	0.4%	89.5%
8.0	6	2.6%	92.1%
8.1	1	0.4%	92.5%
8.6	3	1.3%	93.9%
8.9	3	1.3%	95.2%
9.0	1	0.4%	95.6%
9.2	2	0.9%	96.5%
9.3	2	0.9%	97.4%
9.4	1	0.4%	97.8%
9.5	1	0.4%	98.2%
9.6	1	0.4%	98.7%
9.8	1	0.4%	99.1%
9.9	2	0.9%	100.0%
Total	228	100.0%	

### **Attachment 3 - Continued**



Total	228	100.0%	
9.8	1	0.4%	100.0%
9.2	1	0.4%	99.6%
9.1	1	0.4%	99.1%
8.8	3	1.3%	98.7%
8.7	1	0.4%	97.4%
8.6	1	0.4%	96.9%
8.5	3	1.3%	96.5%
8.4	8	3.5%	95.2%
7.9	3	1.3%	91.7%
7.6	1	0.4%	90.4%
7.5	2	0.9%	89.9%
7.4	2	0.9%	89.0%
7.3	1	0.4%	88.2%
7.2	2	0.9%	87.7%
7.1	6	2.6%	86.8%
7.0	2	0.9%	84.2%
6.9	1	0.4%	83.3%
6.8	1	0.4%	82.9%
6.6	1	0.4%	82.5%
6.0	2	0.9%	82.0%
5.9	1	0.4%	81.1%
5.7	1	0.4%	80.7%
5.6	4	1.8%	80.3%
5.5	2	0.9%	78.5%
5.4	1	0.4%	77.6%
5.3	5	2.2%	77.2%
5.2	4	1.8%	75.0%

## **Attachment 4 - Links with Other Specialties**

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

Specialty	Procedure	Consultation	Total
Specialty	ltems	ltems	Items
Gen. Prac. & Emergency Med.	2	10	12
Oral and Maxillo-facial Surgery	1	15	16
Obstetrics / Gynaecology	0	5	5
General Surgery	0	17	17
Cardio Thoracic Surgery	0	5	5
Neurosurgery	0	18	18
Orthopaedic surgery	0	54	54
Paediatric Surgery	0	14	14
Plastic Surgery	10	0	10
Urology	0	54	54
Vascular Surgery	0	7	7
ENT	0	3	3
Anaesthesia	0	54	54
Dermatology	1	45	46
Paediatric / Thoracic Medicine	0	52	52
General Medicine	1	35	36
Cardiology, Renal, ICU	0	21	21
Radiation, Oncology	3	21	24
Gastroenterology	0	47	47
Neurology	3	54	57
Haematology, Medical Oncology	0	17	17
Psychiatry	0	43	43
Total	19	55	74

### Number of Links with Other Specialties

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

# Otolaryngology, Head & Neck Surgery

# **Summary Status Report**

November 4th Report

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 Otolaryngology (Head & Neck Surgery) Consensus Group.

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 172 items. These comprised 169 procedure items and 3 consultation items.

Analysis of this information showed:

- The median ratio of Otolaryngology's intra time estimates to NCCH's Theatre Times Database observed procedure times was 133.4%. This implies a strong tendency by this group to over estimate intra time.
- There was no significant difference between the ranks given to procedure items and those given to consultation items. The link items were given significantly lower ranks than the non link items (p < 0.01).
- The good map items were given significantly higher ranks than the 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 2.6. This is lower than the median observed for specialties so far examined. In terms of deviations in rates of pay, it should be possible to align Otolaryngology's rankings and ratings with those of the other groups.
- The imputed relative values given to procedure items were not significantly different from those given to consultation items.
- Link items were given significantly lower imputed relative values than non-link items when log transformed data were tested (p < 0.01). Good map items were given significantly higher imputed relative values than poor/no map items when log transformed data were tested (p < 0.05).
- The correlations between the imputed relative values for Otolaryngology and the Medicare Benefits Schedule Fee and CPT RV were reasonable ( $R^2 = 83\%$  and  $R^2 = 76\%$ ).

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

<sup>&</sup>lt;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 Otolaryngology are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 91 minutes and the mean total time was 155 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1											
	Pre	Total									
	Service	Service	Service	Time							
Mean	26	91	38	155							
SD	14	98	29	133							
Min	5	5	5	20							
Max	60	480	160	610							

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.





A summary breakdown is also provided in Table 2.2.

Average	Pre	Intra	Post	Total
Times	Service	Service	Service	Time
	26.6	92.3	38.6	157.5
Consultation Items	6.7	18.3	8.3	33.3
	26.3	91.0	38.1	155.4

Otolaryngology'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 Otolaryngology's intra time estimates to the observed procedure times was 133.4%. This implies a strong tendency by this group to over estimate intra times. Details are 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 Otolaryngology are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 7.2 for cognitive skill, 6.8 for technical skill and 6.4 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

		Table 3.1		
	Cognitive	Technical	Stress	Total
	Skill	Skill		Intensity
Mean	7.2	6.8	6.4	20.4
SD	2.5	2.6	3.2	8.2
Min	1.0	1.0	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. 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	Cognitive	Technical	Stress	Total
Ratings	Skill	Skill		Intensity
Procedure Items	7.1	6.8	6.3	20.2
Consultation Items	10.0	10.0	10.0	30.0
Total Items	7.2	6.8	6.4	20.4

<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. There was no significant difference between the ranks given to procedure items and those given to consultation items.

Table 4.1										
Type of Item	Number	Ranking								
	Reviewed	Highest	Lowest	Average						
Procedure	169	1	172	85.66						
Consultation	3	105.5	159.5	133.67						
Total	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**. The Otolaryngology Consensus Group assessed 44 link items. These comprised all 3 consultation items and 41 of the 169 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 significantly lower than those given to non-link items (sum of ranks test, p < 0.01).

Table 4.2										
Type of Item	Number	Ranking								
	Reviewed	Highest	Lowest	Average						
Procedure-Link	41	5	171	102.02						
Consultation-Link	3	105.5	159.5	133.67						
Total Link	44	5	171	104.18						
Procedure-Non-link	128	1	172	80.42						
Total	172	1	172	86.50						

Good maps of Otolaryngology's items to CPT were available for 41 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 4.3. Good map items were given significantly higher ranks than poor/no-map items (sum of ranks test, p<0.05).

Table 4.3										
Type of Item	Ranking									
	Reviewed	Highest	Lowest	Average						
Good Map	41	7	159.5	72.3						
Poor/Non Map	131	1	172	90.9						
Total	172	1	172	86.5						

# 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 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 Otolaryngology is 1 to 78.5.

By dividing imputed relative values by time we can impute <u>relative</u> rates of pay. The variation in relative rates of pay on intra time is 1 to 3. There is no variation in rates of pay on pre and post times. 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 2.6.

These ranges in relative rates of pay are lower 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 Otolaryngology's rankings and ratings with those of the other groups.

<sup>&</sup>lt;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 imputed relative values given to the procedure items were not significantly different from those given to the consultation items. The link items were given significantly lower imputed relative values than the non-link items when log transformed data were tested (t test, p < 0.01). 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 higher imputed relative values than poor/no-map items (t test, p < 0.05).

	Number	IRVs							
Type of Item	Reviewed	Mean <u>+</u> SD	Low High						
Procedure	169	313 <u>+</u> 331	20 1570						
Consultation	3	70 <u>+</u> 36	40 110						
Link	44	234 <u>+</u> 335	25 1210						
Non-link	128	334 <u>+</u> 326	20 1570						
Good Map	41	336 <u>+</u> 264	40 1200						
Poor/No Map	131	300 <u>+</u> 348	20 1570						
Total	172	308 <u>+</u> 330	20 1570						

Table 5.1

A plot of Otolaryngology'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 83% of the variation in imputed relative values.



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 loc (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 86% of the variation as against 83% previously.



A plot of Otolaryngology's IRVs against CPT RV is set out in Figure 5.3. The fit is reasonable ( $R^2 = 76\%$ ).



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  $R^2 = 76\%$  to  $R^2 = 78\%$ .



100% 90% 80% 70% 60% 50% 40%

30% 20% 10% 0%

60

### **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**

			Cum.												
Time	Freq.	Percentage	Percentage												
5	3	1.7%	1.7%												
8	2	1.2%	2.9%												
9	4	2.3%	5.2%												
10	21	12.2%	17.4%												
11	1	0.6%	18.0%	25% -											
14	4	2.3%	20.3%	2070											-
15	20	11.6%	32.0%												
19	1	0.6%	32.6%	20% -											
20	35	20.3%	52.9%												
30	36	20.9%	73.8%	15% -											
40	31	18.0%	91.9%	1070											
60	14	8.1%	100.0%						1			1			
Total	172	100.0%		10% -							-		1	-	-
Number of miss	sing values	= 0		5% -		<b></b>		-					-	=	_
				070	5	8	9	10	11	14	15	19	20	30	40



#### Attachment 1 - Continued

#### Summary Report for Intra-Service Time



	87	1	0.6%	62.2%
	90	7	4.1%	66.3%
	95	1	0.6%	66.9%
	100	1	0.6%	67.4%
	102	1	0.6%	68.0%
	116	1	0.6%	68.6%
	118	1	0.6%	69.2%
	119	1	0.6%	69.8%
	120	7	4.1%	73.8%
	130	1	0.6%	74.4%
	140	1	0.6%	75.0%
	145	5	2.9%	77.9%
	147	1	0.6%	78.5%
	150	5	2.9%	81.4%
	160	1	0.6%	82.0%
	175	1	0.6%	82.6%
	178	1	0.6%	83.1%
	180	5	2.9%	86.0%
	205	1	0.6%	87.8%
	207	1	0.6%	88.4%
	210	4	2.3%	90.7%
	240	6	3.5%	94.2%
	250	1	0.6%	94.8%
	300	1	0.6%	95.3%
	330	1	0.6%	95.9%
	360	3	1.7%	97.7%
	385	1	0.6%	98.3%
	480	3	1.7%	100.0%
Total		172	100.0%	

#### Attachment 1 - Continued

#### Summary Report for Post-Service Time

				Cum.	
	Time	Freq.	Percentage	Percentage	
	5	10	5.8%	5.8%	
	9	1	0.6%	6.4%	
	10	18	10.5%	16.9%	
	15	9	5.2%	22.1%	~
	20	18	10.5%	32.6%	3
	25	3	1.7%	34.3%	2
	30	42	24.4%	58.7%	
	40	25	14.5%	73.3%	2
	50	3	1.7%	75.0%	
	60	23	13.4%	88.4%	1
	70	10	5.8%	94.2%	1
	90	3	1.7%	95.9%	-
	120	1	0.6%	96.5%	
	130	1	0.6%	97.1%	
	140	3	1.7%	98.8%	
	150	1	0.6%	99.4%	
	160	1	0.6%	100.0%	
Total		172	100.0%		



#### COMPARISON OF OTOLARYNGOLOGY HEAD AND NECK SURGERY (OHN) INTRA TIME ESTIMATES WITH OTHER ESTIMATES

Time	OTHER TIME ESTIMATE (OTE)				Average Min	Time in utes	Ratio 100 x
	ID	Туре	Definition of Time *	common	OHN	OTE	OHN/OTE
F	H4	Priv	Knife to Skin -to- Dressing Applied	36	48.7	39.4	123.5
SO	H6	Priv	Knife to Skin -to- Drapes Removed	42	53.7	43.2	124.4
	H11 H1	Priv	Pt Prepped -to- Drapes Removed	35	57.4 65.2	56.9 39.5	100.8
	H8	Priv	Pt Positioned -to- Drapes Removed	35	56.1	36.9	152.1
*	H10	Priv	Pt Positioned -to- Drapes Removed	1	60.0	75.0	80.0
, E	H13	Priv	Pt Positioned -to- Drapes Removed	21	86.9	44.6	194.8
, ₽	H15 H16	Priv	Pt Positioned -to- Drapes Removed	31	59.2	35.6	166.1
NOL	H10 H17	Pub	Surgeon with Pt -to- Drapes Removed	47	90.8	99.2	96.5
ΤĘ Ο	H18	Priv	Pt Positioned -to- Drapes Removed	59	58.8	33.0	178.3
ER	H19	Pub	Pt Positioned -to- Dressing Applied	38	79.1	72.9	108.5
PO	H20	Pub	Pt Positioned -to- Dressing Applied	51	62.3	46.9	132.7
		Priv Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	95 71	83.0 97.4	62.2	133.4
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removed	34	50.9	36.8	138.4
	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	44	53.2	40.1	132.8
N	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	42	108.9	86.4	126.0
ų	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	6	42.3	26.2	161.8
E a	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	25	65.0	44.4	1/3.2
NOL	H15 H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	78	96.7	85.8	112.8
IT Q	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	49	101.6	111.9	90.8
ER	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	62	60.5	40.0	151.3
P	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	65	79.3	71.7	110.6
	H20	Pub & Briv	Pt Positioned -to- Trans. to Recovery Staff	58	59.3	55.5	106.8
	H1	Priv	Pren Anaes -to- Dranes Removed	26	97.4 58.2	03.9 44.4	131.2
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	36	53.8	68.3	78.8
	H6	Priv	Prep. Anaesto- Drapes Removed	46	53.3	55.7	95.6
ME	H8	Priv	Prep. Anaesto- Drapes Removed	42	54.2	45.4	119.4
Ē	H10	Priv	Prep. Anaesto- Drapes Removed	1	60.0	80.0	75.0
Ĕ	H13 H15	Priv	Anaesthetist with Pt -to- Drapes Removed	25	63.7	48.0	160.5
OA.	H16	Pub	Prep. Anaesto- Dressing Applied	78	96.7	93.6	103.3
EST ()	H17	Pub	Prep. Anaesto- Drapes Removed	50	109.7	140.3	78.2
AF	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	64	59.3	43.7	135.7
A	H19	Pub	Prep. Anaesto- Dressing Applied	44	72.9	87.1	83.7
	H20 CANS	Pub & Priv	Prep. Anaesto- Dressing Applied	57	61.8	<u> </u>	92.6
	Deloitte	Pub & Priv	Induction of Anaes, -to- Drapes Remove	34	50.9	44.3	111.5
	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	149	96.3	96.4	99.9
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	53	79.3	67.1	118.3
	H7	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	31	36.3	30.7	118.0
2	H8	Priv Driv	Prep. Anaes -to- Trans. to Recovery Staff	45	52.4	48.3	108.4
ME	H9R	Priv/Dav	Prep. Anaesto- Trans. to Recovery Staff	41	42.3	36.4	116.0
F.	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	39	54.5	68.8	79.3
12	H12	Pub	Prep. Anaesto- Trans. to Recovery Staff	11	64.1	50.6	126.6
E E E	H14	Pub	Prep. Anaesto- Trans. to Recovery Staff	93	91.3	108.2	84.4
ES	H15	Priv	Induction of Anaesto- Trans. to Recovery Staff	36	72.0	76.2	94.5
NA	H17	Pub	Prep. Anaesto- Trans. to Recovery Staff	7 o 50	109.7	101.2	95.5
∢	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	65	79.4	89.3	88.9
	H20	Pub	Prep. Anaesto- Trans. to Recovery Staff	60	59.7	73.4	81.4
	CANS	Pub & Priv	Prep. Anaesto- Trans. to Recovery Staff	71	97.4	92.7	105.1
	WAGroup	Priv	Induction of Anaesto- I rans. to Recovery Sta	133	93.1	63.8	145.9
l	H3	Priv	Anaesthetist with Pt -to- Trans to Recovery Staff	04 19	44.3	48.8	92.7 90 8
E E	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	40	55.6	83.8	66.3
EAL	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	28	71.9	54.5	131.8
토토	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	35	67.2	94.6	71.0
צt	H18 H10	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	65	59.3	48.1	123.3
ME	C'mix	Pub	Anaesthetist with Pt -to- Trans to Recovery Staff	50 52	79.4 41 1	29.5	139 2
F	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	90	55.4	35.6	155.4
	C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staf	18	28.9	26.5	109.3

\* Definition of Time

- see attachment

\*\* Median ratio of OHN intra time estimates to OPT

Unweighted = 133.4 % Weighted (for number of items in common) = 133.4 %

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

PATHWAYS	6		PT ENTER	PT ENTE	OR OP ROC	THETIC BAY										Fact OD	XFER TO RECOV	FROM
FOR			OP SUITE		prepares pt for anaes-	Anaes. Commence	Start C Surg. With	DP time								End OP Time		
SURGEON AND				Anaesth. arrives to	cannula/ lines	admin/ induction of	pt after anaes	Ptis	Pt is	Pt is	Knife to	Wound	Dressing	Drapes	Surgical Team	Reversal	Xfer of Pt to Recov.	
ANAESTH				talk to pt	insertion	anaes	induction	position	draped	prep'ed	skin	Closure	Applied	Removed	leave pt	of anaes	Staff	
ID	Time	Type																
Hosp4	H4OST	Priv									1		1					
Hosp6	H6OST	Priv									/			1				
Hosp11	H11OST	Priv						,		/				1				
Hosp1 Hosp8	HIOPT	Priv						- '	/*					',				
Hosp10	H10OPT	Priv						1	/*				1	<b>!</b> *				
Hosp13	H13OPT	Priv						1						1				
Hosp15	H15OPT	Priv						/	/* /*				,	/				
Hosp16 Hosp17	H16OPT	Pub					1	/	1.				'	/				
Hosp18	H18OPT	Priv					<b>/</b> /	1						, ,				
Hosp19	H19OPT	Pub						1					1					
Hosp20	H20OPT	Pub						/					/					
		Priv Pub & Priv													· / ,			
Deloitte	DTOPT	Pub & Priv					, 	1	/*	/**				1	,			
Hosp8	H8OPT2	Priv						1	/*						-		1	
Hosp9A	H9AOPT2	Priv						1	/*								1	
Hosp9B	H9BOPT2	Priv/Day						/	/*								1	
Hosp13 Hosp15	H130PT2	Priv						· ',	<b>/*</b>	<b>/*</b> *								
Hosp16	H16OPT2	Pub						i		· ·							1	
Hosp17	H17OPT2	Pub					1										7	
Hosp18	H18OPT2	Priv						/		1++							1	
Hosp19	H19OPT2	Pub						- /	r	/~~							· ',	
CANS	CANSOPT2	Pub & Priv					1	· ·									;	
Hosp1	H1OAT	Priv			1									1				
Hosp4	H4OAT	Priv		1									/					
Hosp6	H6OAT	Priv																
Hospo Hosp10	H10OAT	Priv			· /								,	, /*				
Hosp13	H13OAT	Priv		1										1				
Hosp15	H15OAT	Pub				1								1				
Hosp16	H16OAT	Pub			/								/					
Hosp17 Hosp18	H18OAT	Pub			· · ·									,				
Hosp19	H19OAT	Pub			1								1					
Hosp20	H20OAT	Pub & Priv			1								1					
CAnS	CANSOAT	Pub & Priv			1	,								,	/			
MBS	MBSOAT2	Pub & Priv			1												1	
Hosp5	H5OAT2	Priv			1												1	
Hosp7	H7OAT2	Priv/Day			1												1	
Hosp8	H8OAT2	Priv			/												1	
Hosp9A Hosp9B	H9BOAT2	Priv/Dav															,	
Hosp11	H110AT2	Priv			1												1	
Hosp12	H12OAT2	Pub			1												1	
Hosp14	H14OAT2	Pub			1												1	
Hosp15 Hosp16	H150AT2	Priv			1												',	
Hosp17	H17OAT2	Pub			i i												1	
Hosp19	H19OAT2	Pub			1												1	
Hosp20	H20OAT2	Pub			1												1	
CANS WAGroup	CANSOAT2	Pub & Priv			/	1											, /	
Hosp2	H2THT	Priv		1	1												1	
Hosp3	H3THT	Pub		1													1	
Hosp11	H11THT	Pub		1														1
Hosp13	H13THT	Priv		/													/	
Hosp15	HISTHT	Priv															<i>'</i> ,	
Hosp19	H19THT	Day & Oth	1														1	
C'mix -Pub	CMXPUTHT	Priv		1													1	
C'mix -Pte	CMXPVTHT	Priv		/													1	
C'mix-oth	CMXOTTHT	Priv	1	1													/	<u>.</u>

### **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	3	1.7%	1.7%			
2	5	2.9%	4.7%			
3	12	7.0%	11.6%			
4	10	5.8%	17.4%	30%		
5	19	11.0%	28.5%			
6	10	5.8%	34.3%	25%		
7	20	11.6%	45.9%	2070		
8	35	20.3%	66.3%	20%		
9	10	5.8%	72.1%	2070		
10	48	27.9%	100.0%	4 5 0/		
Total	172	100.0%		15%		
Number of missing values = $0$						



### **Attachment 3 - Continued**

### Summary Report for Technical skill etc.

	Rating	Freq.	Percentage	Cum.		
				Percentage		
1		4	2.3%	2.3%		
2		11	6.4%	8.7%		
3		6	3.5%	12.2%	25% -	
4		14	8.1%	20.3%	2070	
5		27	15.7%	36.0%		
6		6	3.5%	39.5%	20% -	
7		21	12.2%	51.7%		
8		28	16.3%	68.0%	4 50/	
9		19	11.0%	79.1%	15% -	
10		36	20.9%	100.0%		
Tota	al	172	100.0%		10% -	


### **Attachment 3 - Continued**

### **Summary Report for Stress**



### **Attachment 4 - Links with Other Specialties**

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

Procedure Consultation Total						
Specialty	Items	Items	Items			
Gen. Prac. & Emergency Med.	10	0	10			
Oral and Maxillo-Facial Surgery	11	2	13			
Obstetrics / Gynaecology	0	0	0			
General Surgery	4	3	7			
Cardio Thoracic Surgery	1	0	1			
Neurosurgery	4	3	7			
Orthopaedic Surgery	0	3	3			
Paediatric Surgery	2	2	4			
Plastic Surgery	11	0	11			
Urology	0	0	0			
Vascular Surgery	0	0	0			
Ophthalmology	0	0	0			
Anaesthesia	0	3	3			
Dermatology	0	3	3			
Paediatric / Thoracic Medicine	2	3	5			
Paediatric / Thoracic Medicine	2	2	4			
Cardiology, Renal, ICU	2	0	2			
Radiation, Oncology	0	3	3			
Gastroenterology	0	3	3			
Neurology	4	3	7			
Haematology, Medical Oncology	0	0	0			
Psychiatry	0	3	3			
Total	41	3	44			

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

Anaesthesiology

## **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

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

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 376 items. These comprised 65 consultation items,108 procedure items and 203 proxy anaesthetic items<sup>1</sup>.

Analysis of this information showed:

- The median ratio of Anaesthesiology's procedure item intra time estimates to the observed theatre procedure times was 122.8%. This implies a tendency by the group to over estimate their intra times for the procedure items.
- The median ratio of Anaesthesiology's proxy anaesthetic item intra time estimates to the observed theatre anaesthetic times was 101.5%.
- The Group gave far higher ranks to proxy items than to procedure items and very much higher ranks to procedure items than to 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 lower than those given to poor / no map items ( p < 0.001).
- The maximum range in relative rates of pay<sup>2</sup> implied by the Group's rankings was
   5.4. This is higher than the median observed for specialties so far examined.
- 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 Anaesthesiology's rankings and ratings with those of the other groups.
- The imputed relative values  $(IRVs)^2$  given to proxy items were very much greater than those given to procedure items and the IRVs given to procedure items were significantly greater than those given to consultation items (p < 0.001).

- The link items were given very much lower imputed relative values than the non link items.
- The good map items were given very much lower imputed relative values than the poor / no map items.
- The correlation between the imputed relative values for Anaesthesiology and the Medicare Benefits Schedule Fee was reasonable ( $R^2 = 84\%$ ).
- The correlation between the imputed relative values for Anaesthesiology and CPT RV was extremely poor ( $R^2 = 7\%$ ).

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 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 Anaesthesiology are set ou in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 111 minutes and the mean total time was 138 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1						
	Pre	Intra	Post	Total		
	Service	Service	Service	Time		
Mean	13	111	14	138		
SD	8	136	8	148		
Min	0	5	0	5		
Max	35	630	30	685		

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 consultation items, procedure items, proxy items and total items.



### Figure 2.1

Table 2.2						
Average	Pre	Intra	Post	Total		
Times	Service	Service	Service	Time		
Consultation Items	12.1	37.7	18.0	67.8		
Procedure Items	8.7	53.5	8.9	71.1		
Proxy items	16.3	164.4	16.0	196.7		
Total Items	13.4	110.6	14.3	138.3		

A summary breakdown is also provided in Table 2.2.

Anaesthesiology's procedure intra time estimates and Anaesthesiology'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 Anaesthesiology's procedure item intra time estimates to the observed procedure times was 122.8%. This implies a tendency by the group to over estimate their intra time estimates for the procedure items. The median ratio of Anaesthesiology's proxy item intra time estimates to the observed anaesthetic times was 101.5%. 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 Anaesthesiology are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 4.7 for cognitive skill, 4.5 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	Technical	Stress	Total			
	Skill	Skill		Intensity			
Mean	4.7	4.5	4.6	13.8			
SD	2.3	2.6	2.8	7.8			
Min	1.0	1.0	1.0	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. They are provided for consultation items, procedure items, proxy items and all items.



### Figure 3.1

Average Intensity	Cognitive	Technical	Stress	Total		
Ratings	Skill	Skill		Intensity		
Consultation Items	2.5	1.0	1.0	4.5		
Procedure Items	3.8	3.9	4.1	11.8		
Proxy items	5.9	6.0	6.1	18.0		
Total Items	4.7	4.5	4.6	13.8		

Table 3.2

A summary breakdown is also provided in Table 3.2.

<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. There is a vast difference in the ranks given to the three types of item. The proxy items were given far higher ranks than the procedure items and the procedure items were given very much higher ranks than the consultation items (sum of ranks test, p < 0.001). The top 56 ranked items are all proxy aneasthetic items.

l able 4.1						
Type of Item	Number		Ranking			
	Reviewed	Highest	Lowest	Average		
Consultation	65	182	373	288.96		
Procedure	108	57	376	232.53		
Proxy	203	1	317	132.91		
Total	376	1	376	188.50		

. . . . . .

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**. The Anaesthesiology Consensus Group assessed 120 link items. These comprised all of their 65 consultation items, 35 of the 108 procedure items and 20 of the 203 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 very much lower than those given to non-link items (sum of ranks test, p < 0.001).

Table 4.2						
Type of Item	Number		Ranking			
	Reviewed	Highest	Lowest	Average		
Consultation-Link	65	182	373	288.96		
Procedure-Link	35	95.5	376	267.74		
Proxy-Link	20	74	292.5	200.35		
Total Link	120	74	376	268.00		
Procedure-Non-link	73	57	374	215.65		
Proxy-Non-Link	183	1	317	125.54		
Total Non-Link	256	1	374	151.23		
Total	376	1	376	188.50		

Good maps of Anaesthesia's items to CPT were available for 20 of their 376 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 very much lower than those given to the poor / no map items (sum of ranks test, p < 0.001).

Table	4.3
-------	-----

Type of Item	Number	Ranking		
	Reviewed	Highest	Lowest	Average
Good Map	20	140	354.5	275.6
Poor/No Map	356	1	376	183.6
Total	376	1	376	188.5

# 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 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 Anaesthesiology is 1 to 526.

By dividing imputed relative values by time we can impute <u>relative</u> 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 (pre: intra: post), the range in relative rates of pay is 1 to 5.4.

These ranges in relative rates of pay are higher than the median observed for specialties examined so far<sup>4</sup>. In terms of deviations in rates of pay, it should be possible to align Anaesthesiology's rankings and ratings with those of the other groups; but there could still be some difficulty with alignment because the link items are ranked so low.

<sup>4</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 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 proxy items were very much greater than those given to the procedure items and the IRVs given to the procedure items were significantly greater than those given to the consultation items (ANOVA, 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 very much lower imputed relative values than the poor / no map items (t tests, p < 0.001).

	Number	IRVs		
Type of Item	Reviewed	Mean <u>+</u> SD	Low	High
Consultation	65	1128 <u>+</u> 648	230	2200
Procedure	108	2506 <u>+</u> 2741	90	15450
Proxy	203	10675 <u>+</u> 12461	855	47340
Link	120	1514 <u>+</u> 1283	90	8295
Non-link	256	9099 <u>+</u> 11619	216	47340
Good Map	20	1322 <u>+</u> 828	420	3565
Poor/No Map	356	6979 <u>+</u> 10441	90	47340
Total	376	6678 <u>+</u> 10240	90	47340

Table	5.1
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A plot of Anaesthesiology's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is reasonable  $(R^2 = 0.84)^5$ . However, there are a number of outliers which should be investigated. These comprise MBS item numbers 39128, 39130, 39653, 39654, 45752, 45754, 52375 and 52382.

 $<sup>^5\,</sup>$  An R  $^2\,$  value of 0.84 means that the line explains 84% of the variation.





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 explains 82% of the variation as against 84% previously. There are again a number of outliers which should be investigated. These are MBS item numbers 13025, 13939 and 39136 in addition to 39130, which was mentioned previously.



Figure 5.2

A plot of Anaesthesiay's IRVs against CPT RV is set out in Figure 5.3. The fit is very poor ( $R^2 = 0.07$ ).



A log/log plot is also provided (Figure 5.4). The fit is still poor explaining 11% of the variation as against 7% 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	2.9%	2.9%
1	2	0.5%	3.5%
2	9	2.4%	5.9%
4	1	0.3%	6.1%
5	38	10.1%	16.2%
6	5	1.3%	17.6%
7	1	0.3%	17.8%
8	5	1.3%	19.1%
10	134	35.6%	54.8%
11	5	1.3%	56.1%
12	5	1.3%	57.4%
13	5	1.3%	58.8%
14	10	2.7%	61.4%
15	52	13.8%	75.3%
16	5	1.3%	76.6%
18	5	1.3%	77.9%
20	22	5.9%	83.8%
25	30	8.0%	91.8%
30	30	8.0%	99.7%
35	1	0.3%	100.0%
Total	376	100.0%	



Number of missing values = 0

### **Attachment 1 - Continued**

#### Summary Report for Intraservice Time

Time	Freq	Percentage	Cum. Percentage
5	9	2.4%	2.4%
10	12	3.2%	5.6%
15	22	5.9%	11.4%
20	29	7.7%	19.1%
25	7	1.9%	21.0%
30	52	13.8%	34.8%
35	3	0.8%	35.6%
40	8	2.1%	37.8%
45	34	9.0%	46.8%
50	6	1.6%	48.4%
55	1	0.3%	48.7%
60	40	10.6%	59.3%
65	3	0.8%	60.1%
70	4	1.1%	61.2%
75	17	4.5%	65.7%
80	2	0.5%	66.2%
85	1	0.3%	66.5%
90	15	4.0%	70.5%
95	1	0.3%	70.7%
100	7	1.9%	72.6%
105	4	1.1%	73.7%
110	2	0.5%	74.2%
120	10	2.7%	76.9%
130	1	0.3%	77.1%
135	3	0.8%	77.9%
140	1	0.3%	78.2%
150	4	1.1%	79.3%
155	1	0.3%	79.5%
160	1	0.3%	79.8%
165	3	0.8%	80.6%
175	1	0.3%	80.9%
180	3	0.8%	81.6%
195	4	1.1%	82.7%
200	1	0.3%	83.0%
210	1	0.3%	83.2%
225	2	0.5%	83.8%



Continued next page

	230	1	0.3%	84.0%
	235	1	0.3%	84.3%
	240	2	0.5%	84.8%
	250	1	0.3%	85.1%
	270	3	0.8%	85.9%
	285	1	0.3%	86.2%
	300	9	2.4%	88.6%
	320	1	0.3%	88.8%
	325	1	0.3%	89.1%
	330	4	1.1%	90.2%
	350	2	0.5%	90.7%
	360	9	2.4%	93.1%
	420	3	0.8%	94.7%
	450	3	0.8%	95.5%
	460	1	0.3%	95.7%
	480	4	1.1%	96.8%
	490	1	0.3%	97.1%
	510	3	0.8%	97.9%
	540	3	0.8%	98.7%
	590	2	0.5%	99.2%
	600	1	0.3%	99.5%
	630	2	0.5%	100.0%
Total		376	100.0%	

Number of missing values = 0

### **Attachment 1 - Continued**

### Summary Report for Post Service Time

Time	Freq	Percentage	Cum. Percentage
0	16	4.3%	4.3%
2	3	0.8%	5.1%
3	3	0.8%	5.9%
5	9	2.4%	8.2%
6	9	2.4%	10.6%
8	5	1.3%	12.0%
10	164	43.6%	55.6%
12	5	1.3%	56.9%
14	15	4.0%	60.9%
15	41	10.9%	71.8%
18	10	2.7%	74.5%
20	19	5.1%	79.5%
22	10	2.7%	82.2%
25	8	2.1%	84.3%
26	10	2.7%	87.0%
30	49	13.0%	100.0%
Total	376	100.0%	



Number of missing values = 0

#### Anaesthesiology Summary Report Attachment 2 COMPARISON OF ANAESTHESIOLOGY AND HYPERBARIC MEDICINE - NON-PROXY ITEMS (ANAEN) ----

			VIRA TIME ESTIMATES WITH OTHER EST	INALES		<b>T</b> '	Ratio 100
Timo		ОТ	HER TIME ESTIMATE (OTE)	NO. OI	Average Minu	Time in	x
line				common		075	ANAEN
	ID	Туре	Definition of Time *	Common	ANAEN	OTE	/OTE
F	H4	Priv	Knife to Skin -to- Dressing Applied	5	51.0	41.1	124.0
so	H6	Priv	Knife to Skin -to- Drapes Removed	0	20.5	20.0	107.4
	H11	Priv	Pt Prepped -to- Drapes Remove	4	32.5	30.3	107.4
	H1	Priv	Pt Positioned -to- Drapes Removed	3	23.3	22.5	103.6
	H8	Priv	Pt Positioned -to- Drapes Removed	16	30.9	24.7	125.5
*	H10	Priv	Pt Positioned -to- Drapes Removed	2	45.0	37.8	119.2
ΠE	H13	Priv	Pt Positioned -to- Drapes Removed	10	32.5	24.9	130.6
≦ ⊢	H15	Priv	Pt Positioned -to- Drapes Removed	15	35.7	41.7	85.6
zÊ	H16	Pub	Pt Positioned -to- Dressing Applied	24	33.5	33.5	100.1
ĔÖ		Pub	Burgeon with Pt -to- Drapes Removed	13	33.1	40.4	129.2
RA		PIIV	Pt Positioned to Drassing Applied	30	31.0	24.0	120.3
Ē		Pub	Pt Positioned -to- Dressing Applied	21	29.0	20.6	07.6
ō		Priv	Surgeon with Ptto- Surgeon Leaves Pt	2	20.9	29.0	31.5
		Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	18	25.0	19.4	147.1
	Deloitte	Pub & Priv	Pt Positioned -to- Dranes Remove	10	45.6	31.1	146.6
		Driv	Pt Positioned -to- Trans, to Recovery Staff	17	30.3	28.0	108.3
	Над	Priv	Pt Positioned -to- Trans. to Recovery Staff	8	33.8	20.0	100.5
2	HOR	Priv/Dav	Pt Positioned -to- Trans. to Recovery Staff	8	26.3	16.2	162.2
ME	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	9	31.7	27.8	102.1
E (a	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	15	34.3	41.4	82.9
No L	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	24	33.5	36.2	92.8
Εğ	H17	Pub	Surgeon with Pt -to- Trans, to Recovery Staff	14	32.5	43.7	74.4
L'R'	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	29	31.2	26.9	116.1
PE	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	23	40.7	37.0	109.9
0	H20	Pub	Pt Positioned -to- Trans. to Recovery Staff	15	28.3	34.3	82.7
	CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Sta	19	62.9	47.3	133.0
	H1	Priv	Prep. Anaesto- Drapes Removed	3	30.0	30.6	98.0
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	4	56.3	60.9	92.3
	H6	Priv	Prep. Anaesto- Drapes Removed	0			
ų	H8	Priv	Prep. Anaesto- Drapes Removed	16	30.3	33.1	91.7
2 L	H10	Priv	Prep. Anaesto- Drapes Removed	2	45.0	53.5	84.1
	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	10	32.5	28.9	112.5
AT)	H15	Priv	Induction of Anaes -to- Drapes Removed	15	35.7	49.5	72.1
ΞÒ	H16	Pub	Prep. Anaesto- Dressing Applied	24	33.5	40.0	83.9
ES	H17	Pub	Prep. Anaesto- Drapes Removed	14	32.5	52.4	62.1
AN	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	28	31.4	30.4	103.3
AI	H19	Pub	Prep. Anaesto- Dressing Applied	20	41.5	43.6	95.3
	H20	Pub	Prep. Anaesto- Dressing Applied	17	28.5	56.7	50.3
	CANS	Pub & Priv	Prep. Anaesto- Surg.Leaves Pt	19	62.9	49.7	126.5
	Deloitte	Pub & Priv	Induction of Anaesto- Drapes Remove	7	47.9	34.6	138.4
	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	46	62.2	62.0	100.3
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	6	43.3	44.5	97.4
	H7	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	0			
2	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	16	30.3	35.3	86.0
ų	H9A	Priv	Prep. Anaesto- Trans. to Recovery Staff	7	35.7	42.5	84.0
É	H9B	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	7	28.6	28.7	99.6
5 <u>C</u>	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	4	32.5	39.5	82.3
불부	H12	Pub	Prep. Anaesto- Trans. to Recovery Staff	4	35.0	32.4	107.9
ΞŐ	H14	PUD	Prep. Anaesto- Trans. to Recovery Staff	33	36.5	58.6	62.3
ES		PIIV	Bron Angen to Trong to Recovery Stall	10	34.3	40.2	71.2
<b>∀</b> ∠		Pub	Prep. Anaesto-Trans. to Recovery Stall	24	20.0	42.0	 
AI		Pub	Prep. Anaesto-Trans. to Recovery Stall	14	32.5	1.10	20.4
		Pub	Prop. Anges to Traps to Recovery Staff	20	29.4	40.9	47.2
		FUD Dub & Driv	Prop. Analesto-Trans. to Recovery Stall	17	20.0	54.5	47.2
	WAGroup		Induction of Anaes, -to- Trans, to Recovery Stall	31	32.9	36.3	88.5
	на	Driv	Anaesthetist with Pt -to- Trans to Recovery Staff	2	17.5	23.7	73.8
	112 H3	Driv	Anaesthetist with Pt -to- Trans to Recovery Staff	2	17.5	20.1	73.0
RE	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	1	32 5	54 3	50 0
AT	H13	Priv	Anaesthetist with Pt -to- Trans to Recovery Staff	10	32.5	33.1	03.9 QR 2
ᇁᅌ	H15	Priv	Anaesthetist with Pt -to- Trans to Recovery Staff	18	32.8	69.9	46 9
ĒĒ	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	29	31.9	32.2	99.2
	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	25	39.4	63.2	62.3
ME	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	16	29.7	44.8	66.4
F	C'mix	Driv	Apport Apport Approximation of the second staff	20	27.2	27.7	09.1

\* Definition of Time

C'mix Othe Day & Other Anaesthetist with Pt -to- Trans.to Recovery Sta

\*\* Median ratio of ANAEN intra time estimates to OPT Unweighted = 119.2 %

30

6

27.2

38.3

27.7

21.9

- see Attachment A

Anaesthetist with Pt -to- Trans.to Recovery Staff

Weighted (for number of items in common) = 122.8 %

C'mix

Priv

98.1

174.9

# Attachment 2 (continued) COMPARISON OF ANAESTHESIOLOGY AND HYPERBARIC MEDICINE - PROXY ITEMS (ANAEP)

-		IN	TRA TIME ESTIMATES WITH OTHER ES	TIMATES			Potio 100
		от	HER TIME ESTIMATE (OTE)	No. of	Average	Time in	
Time		•		items in	Minu	utes	
	ID	Type	Definition of Time *	common	ΔΝΔΕΡ	OTE	ANAEP
	10	Type				012	/OTE
E.	H4	Priv	Knife to Skin -to- Dressing Applied	68	72.1	50.8	141.9
SS	H6	Priv	Knife to Skin -to- Drapes Removed	53	73.6	49.2	149.6
•	H11	Priv	Pt Prepped -to- Drapes Removed	61	82.3	78.7	104.6
	H1	Priv	Pt Positioned -to- Drapes Removed	54	67.2	43.4	155.1
	H8	Priv	Pt Positioned -to- Drapes Removed	72	75.1	47.4	158.5
	H10	Priv	Pt Positioned -to- Drapes Removed	43	83.6	51.7	161.7
щ	H13	Priv	Pt Positioned -to- Drapes Removed	48	66.0	44.0	150.0
l≧	H15	Priv	Pt Positioned -to- Drapes Removed	86	113.4	65.2	173.8
z _	H16	Pub	Pt Positioned -to- Dressing Applied	101	115.8	84.1	137.8
으ե	H17	Pub	Surgeon with Pt -to- Dranes Removed	110	155.6	129.1	120.6
<u>ē</u> Ā	H18	Driv	Pt Positioned to: Drapes Removed	01	04.2	57.6	163.6
R.	1110	Pub	Dt Depitioned to Drapping Applied	91	105.7	05.5	103.0
E C	119	Fub	Pt Positioned to Dressing Applied	00	123.7	95.5	131.7
0		Pub	Pt Positioned -to- Dressing Applied	87	89.6	61.4	145.9
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	/8	106.2	78.8	134.8
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	100	103.4	76.1	135.9
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removed	60	82.1	56.6	145.0
	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	72	75.1	51.8	144.9
~	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	62	130.5	93.4	139.6
ш	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	39	54.2	38.8	139.7
Σ	H13	Priv	Pt Positioned -to- Trans, to Recovery Staff	50	66.5	49.6	134.1
n T 🔍	H15	Priv	Pt Positioned -to- Trans to Recovery Staff	86	113.9	70.4	161 7
5 E	H16	Pub	Pt Positioned to Trans to Recovery Staff	102	115.3	90.8	127.0
Ēð	H17	Pub	Surgeon with Pt _to_Trans. to Recovery Staff	102	155.1	137.0	1127.0
а <u>с</u>		P ub Driv	Dt Desitioned to Trans to Desovery Staff	02	04.5	65.1	145.2
H		Dub	Dt Depitioned to Trans. to Recovery Stall	93	94.0	101.0	140.2
ō	H19	Pub	Pt Positioned to Trans. to Recovery Stall	104	130.0	101.9	127.3
		Pub Dub & Driv	Pt Positioned -to- Trans. to Recovery Stall	80	88.1	68.5	128.7
	CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Stat	101	102.8	81.5	126.1
	H1	Priv	Prep. Anaesto- Drapes Removed	56	68.5	59.9	114.4
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	66	76.0	86.7	87.7
	H6	Priv	Prep. Anaesto- Drapes Removed	54	72.6	58.4	124.3
Ψ	H8	Priv	Prep. Anaesto- Drapes Removed	73	75.1	58.9	127.6
l€	H10	Priv	Prep. Anaesto- Drapes Removed	44	82.4	67.3	122.5
υ.	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	50	66.5	58.8	113.2
EE	H15	Priv	Induction of Anaes -to- Drapes Removed	87	113.3	79.8	142.0
₽ĕ	H16	Pub	Prep, Anaes, -to- Dressing Applied	103	112.0	98.2	114.1
ST C	H17	Pub	Pren Anaes -to- Drapes Removed	110	155.9	163.1	95.5
u ∎	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	92	95.9	76.5	125.5
Ż	H10	Pub	Prop. Apageto_ Drossing Applied	92	123.2	120.0	102.7
~	L119	Pub	Prop. Analosto: Dressing Applied	00	123.2	120.0	102.7
			Prep. Anaesto- Dressing Applied	00	09.2	03.0	100.7
	CANS		Prep. Anaesto- Surg.Leaves Pt	101	102.8	84.2	122.0
	Deloitte	Pub & Priv	Induction of Anaesto- Drapes Remove	59	82.9	68.4	121.1
	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	205	163.6	186.5	87.7
l	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	71	106.9	96.9	110.3
l	H7	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	48	52.5	35.4	148.3
*	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	76	73.8	62.7	117.7
2	H9A	Priv	Prep. Anaesto- Trans. to Recovery Staff	63	128.9	106.9	120.6
H H	H9B	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	40	53.5	51.1	104.8
F ~	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	63	81.1	96.5	84.1
ບິ	H12	Pub	Prep. Anaesto- Trans. to Recovery Staff	29	59.5	58.9	101.0
μ	H14	Pub	Prep. Anaesto- Trans. to Recovery Staff	115	139.6	143.6	97.2
ΞS	H15	Priv	Induction of Anaes, -to- Trans, to Recovery Staff	89	118.0	95.9	123.1
S	H16	Pub	Pren Anaes -to- Trans to Recovery Staff	102	112.9	106.0	106.5
AE	H17	Pub	Pren Anaes -to- Trans to Recovery Staff	110	155.0	171 0	00.5
AZ		Dub	Prop. Analosto Trans. to Recovery Staff	106	100.0	171.3	101.5
		Fub	Prep. Anaes -to Trans. to Recovery Stall	100	120.1	120.2	101.5
l			Prop. Anaesto- Hans. to Recovery Stall	90	01.1	91.9	95.5
l	CANS		Induction of Annoon to Trans to Decovery Staff	101	102.8	90.2	113.9
L	wAGroup		Induction of Anaesto- Trans. to Recovery Sta	124	114.5	94.8	120.8
	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	83	101.3	76.0	133.3
щ	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	26	77.3	67.9	113.9
ĽΫ́	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	63	81.1	114.3	71.0
× ⊥	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	51	66.8	64.1	104.1
ΕĒĒ	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	89	118.9	112.5	105.7
1 SE	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	94	94.5	81.3	116.3
μ μ	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	105	129.1	144.4	89.4
Σ	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recoverv Staff	74	58.0	35.0	165.9
F	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	102	61.2	43.9	139.5
	C'mix Othe	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staf	53	48.3	30.5	158.3
						50.0	

\* Definition of Time

\*\* Median ratio of ANAEP intra time estimates to OAT2 Unweighted = 105.7 %

- see Attachment A

Weighted (for number of items in common) = 101.5 %

РАТ	HWAYS	FOR		PT ENT	ERS ANAESTH	IETIC BAY	START	OP TIME							END C	OP TIME	XFER TO RECOV	XFER FROM
SUR	GEON	AND	PT ENTERS	3	Anaestn. prepares Pt	Anaes.												RECOV
ANA	ESTHE	TIST	OP SUITE	Anaesth. arrives to tal to Pt	k for anaes- cannula/	admin/ induction of	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	to Recov. Staff	
ID	TIME	TYPE			incotion	anaes												
Hosp4	H4OST	Priv																
Hosp6	H6OST	Priv																
Hosp11	H11OST	Priv																
Hosp1 Hosp8	H1OPT	Priv																
Hosp10	H10OPT	Priv																
Hosp13	H13OPT	Priv							1					·				
Hosp15	H15OPT	Priv							1									
Hosp16	H16OPT	Pub							1									
Hosp17	H17OPT	Pub																
H0sp18 Hosp19	H180PT	Pnv Pub																
Hosp20	H20OPT	Pub																
APHA	APHAOPT	Priv																
CANS	CANSOPT	Pub & Priv																
Deloitte	DTOPT	Pub & Priv																
Hosp8	H8OPT2	Priv																
Hosp9A Hosp9B	H9AOP12 H9BOPT2	Priv/Dav							1									
Hosp13	H13OPT2	Priv							1									
Hosp15	H15OPT2	Priv							1	1								
Hosp16	H16OPT2	Pub							÷	1								
Hosp17	H17OPT2	Pub																
Hosp18	H18OPT2	Priv																
Hosp19 Hosp20	H19OPT2	Pub							1	1								
CANS	CANSOPT2	Pub & Priv																
Hosp1	H1OAT	Priv																
Hosp4	H4OAT	Priv																
Hosp6	H6OAT	Priv																
Hosp8	H8OAT	Priv																
Hosp10 Hosp13	H10OAT H13OAT	Priv												I				
Hosp15	H15OAT	Pub																
Hosp16	H16OAT	Pub													-			
Hosp17	H17OAT	Priv																
Hosp18	H18OAT	Pub												_				
Hosp19	H19OAT	Pub Dub 8 Daiu																
CAnS	CANSOAT	Pub & Priv																
Deloitte	DTOAT	Pub & Priv																
MBS	MBSOAT2	Pub & Priv																
Hosp5	H5OAT2	Priv																
Hosp7	H7OAT2	Priv/Day																
Hosp8	H8OAT2	Priv																
Hosp9A Hosp9B	H9BOAT2	Priv/Dav																
Hosp11	H11OAT2	Priv																
Hosp12	H12OAT2	Pub																
Hosp14	H14OAT2	Pub				_												
Hosp15	H15OAT2	Priv																
Hosp16	H16OAT2	Pub																
Hosp19	H19OAT2	Pub																
Hosp20	H20OAT2	Pub																
CANS	CANSOAT2	Pub & Priv																
WAGroup	WAOAT2	Priv		_														
Hosp2	H2THT	Priv																
Hosp3	HSTHT H11THT	Pub																
Hosp13	HISTHT	Priv																
Hosp15	H15THT	Priv																
Hosp18	H18THT	Priv																
Hosp19	H19THT	Day & Othe	r in the second s															
C'mix -Pub	CMXPUTHT	Priv																
C'mix-Pte C'mix-oth	CMXPVIHI	Priv 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.

Rating	Frequency	%age	Cume %age
1	2	0.5%	0.5%
2	53	14.1%	14.6%
3	66	17.6%	32.2%
4	108	28.7%	60.9%
5	50	13.3%	74.2%
6	25	6.6%	80.9%
7	20	5.3%	86.2%
8	9	2.4%	88.6%
9	7	1.9%	90.4%
10	36	9.6%	100.0%
Total	376	100.0%	





Number of missing values = 0

### **Attachment 3 - Continued**

### Summary Report for Technical skill etc.



## **Attachment 3 - Continued**



### **Attachment 4 - Links with Other Specialties**

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

Specialty	Proxy	Procedure	Consultation	Total
	Items	Items	Items	Items
Gen. Prac. & Emergency Med.	20	12	0	32
Oral and Maxillo-Facial Surgery	0	0	16	16
Obstetrics / Gynaecology	0	0	5	5
General Surgery	0	0	65	65
Cardio Thoracic Surgery	0	0	5	5
Neurosurgery	0	6	23	29
Orthopaedic Surgery	0	0	65	65
Paediatric Surgery	0	1	16	17
Plastic Surgery	0	0	0	0
Urology	0	0	0	0
Vascular Surgery	0	0	7	7
Ophthalmology	0	0	0	0
Otolaryngology (Head & Neck Surgery)	0	0	3	3
Dermatology	0	0	45	45
Paediatric / Thoracic Medicine	0	2	63	65
General Medicine	0	5	46	51
Cardiology, Renal, ICU	0	18	25	43
Radiation, Oncology	0	0	26	26
Gastroenterology	0	0	58	58
Neurology	0	0	65	65
Haematology, Medical Oncology	0	4	22	26
Psychiatry	0	0	54	54
Total	20	35	65	120

### Number of Links with Other Specialties

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

Dermatology

# **Summary Status Report**

November 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 Dermatology Consensus Group.

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 125 items. These comprised 80 procedure items and 45 consultation items.

Analysis of this information showed:

- The median ratio of Dermatology's intra time estimates to NCCH's Theatre Times Database observed procedure times was 120.7%. This suggests an upwards bias in the Group's intra time estimates.
- The Group gave higher ranks to procedure items than to consultation items (p < 0.05).
- There were 99 link items and these were spread evenly throughout the rankings.
- There were only 3 potential core items, however these were also spread evenly throughout the rankings.
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was **1 to 3.7**. This is lower 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 Dermatology's rankings and ratings with those of the other groups.
- The imputed relative values (IRVs)<sup>1</sup> given to procedure items were significantly greater than those given to consultation items (p < 0.05).
- There were no significant differences between the IRVs given to link and non-link items nor between good map and poor/no map items.
- The correlation between the imputed relative values for Dermatology and the Medicare Benefits Schedule Fee was poor ( $\vec{R} = 0.68$ ). It was also poor between the Group's imputed relative values and CPT RV, ( $\vec{R} = 0.43$ ).

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

<sup>&</sup>lt;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 Dermatology are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 29 minutes and the mean total time was 50 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1						
	Pre	Intra	Post	Total		
	Service	Service	Service	Time		
Mean	9	29	12	50		
SD	6	21	11	32		
Min	1	3	1	5		
Max	30	150	90	185		

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



### Figure 2.1

Table 2.2					
Average	Pre	Intra	Post	Total	
Times	Service	Service	Service	Time	
Procedure Items	12.1	31.9	14.7	58.7	
Consultation Items	3.8	24.4	6.8	35.0	
Total Items	9.1	29.2	11.9	50.2	

A summary breakdown is also provided in Table 2.2.

Dermatology'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 Dermatology's intra time estimates to the observed procedure times was 120.7%. This implies a tendency by this group to over estimate intra times. Details are 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 Dermatology are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 7.3 for cognitive skill, 7.0 for technical skill and 6.1 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	7.3	7.0	6.1	20.4		
SD	1.4	1.8	1.7	4.9		
Min	3.0	2.0	1.0	6.0		
Max	10.0	10.0	9.0	29.0		

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.

Average Intensity Ratings	Cognitive Skill	Technical Skill	Stress	Total Intensity
Procedure Items	6.8	6.3	6.0	19.1
Consultation Items	8.2	8.3	6.3	22.8
Total Items	7.3	7.0	6.1	20.4

Table 3.2

- <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 relative values.

A summary of the ranks given to procedure and consultation items is set out in Table 4. The procedure items were given higher ranks than the consultation items (sum of ranks test, p < 0.05).

Table 4.1										
Type of Item	Number		Ranking							
	Reviewed	Highest	Lowest	Average						
Procedure	80	1	125	58.21						
Consultation	45	18	116	71.51						
Total	125	1	125	63.00						

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known a**sink items**. The Dermatology Consensus Group assessed 99 link items. These comprised all of their 45 consultation items and 54 of the 80 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. There was very little difference between the ranks given to link items and those given to non-link items.

Table 4.2										
Type of Item	Number Ranking									
	Reviewed	Highest	Lowest	Average						
Procedure-Link	54	18.5	116	71.51						
Consultation-Link	45	3	120	56.68						
Total Link	99	3	120	63.42						
Procedure-Non-link	26	1	125	61.40						
Total	125	1	125	63.00						

Good maps of Dernatology's items to CPT were available for 3 of their 125 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. There was very little difference between the average ranks.

	Table 4.3			
Type of Item	Number		Ranking	
	Reviewed	Highest	Lowest	Average
Good Map	3	29	97.5	63.8
Poor/Non Map	122	1	125	63.0
Total	125	1	125	63.0

## 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 case these imputed relative values can often be derived directly from these formulae.

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

- 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 Dermatology is 1 to 78.5.

By dividing imputed relative values by time we can imput<u>eelative</u> rates of pay. The variation in relative rates of pay on intra time is 1 to 3There is no variation in rates of pay on pre and post times. 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 to 3.7**.

The effective range in relative rates of pay is lower than the median observed for specialtic examined so far<sup>3</sup>. However, in terms of deviations in rates of pay, it should still be possible to align Dermatology'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 IRVs given to the procedure items were significantly greater than those given to consultation items in absolute terms (t test, p<0.05), but not in relative (i.e. percentage) terms. There were no significant differences between the IRVs given to link and non-link items nor between those given to good map and poor/no map items.

		Table 5.1							
Number IRVs									
Type of Item	Reviewed	Mean <u>+</u> SD	Low High						
Procedure	80	1866 <u>+</u> 1390	78 8580						
Consultation	45	1344 <u>+</u> 741	290 2640						
Link	99	1608 <u>+</u> 977	188 4928						
Non-link	26	1948 <u>+</u> 1884	78 8580						
Good Map	3	1559 <u>+</u> 785	808 2375						
Poor/No Map	122	1681 <u>+</u> 1231	78 8580						
Total	125	1678 <u>+</u> 1220	78 8580						

A plot of Dermatology'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 ~67% of the variation in imputed relative values. There are two clear outliers, MBS items 31002 ar 31355. When these are removed the fit improves to  $\mathbf{R} = 0.70$ .





We might expect the magnitude of error deviation to be small for low value items and larg 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 marginally better than that for IRV against Schedule Fee, explaining 74% of the variation as against 68% previously.



Figure 5.2

A plot of Dermatology's IRVs against CPT RV is set out in Figure 5.3. The fit is poor  $(R^2 = 0.43)$ .



### **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**

			Cum.
Time	Freq.	Percentage	Percentage
 1	2	1.6%	1.6%
3	30	24.0%	25.6%
4	1	0.8%	26.4%
5	31	24.8%	51.2%
10	20	16.0%	67.2%
12	1	0.8%	68.0%
15	29	23.2%	91.2%
20	8	6.4%	97.6%
25	2	1.6%	99.2%
30	1	0.8%	100.0%
Total	125	100.0%	



Number of missing values = 0

### **Attachment 1 - Continued**

#### Summary Report for Intra-Service Time

Tir	ne	Freq.	Percentage	Cum. Percentage
	3	5	4.0%	4.0%
	4	2	1.6%	5.6%
	5	7	5.6%	11.2%
	7	4	3.2%	14.4%
	10	7	5.6%	20.0%
	15	10	8.0%	28.0%
	17	1	0.8%	28.8%
	20	20	16.0%	44.8%
	25	6	4.8%	49.6%
	30	25	20.0%	69.6%
	35	4	3.2%	72.8%
	40	6	4.8%	77.6%
	45	15	12.0%	89.6%
	60	8	6.4%	96.0%
	75	2	1.6%	97.6%
	90	1	0.8%	98.4%
1	100	1	0.8%	99.2%
1	150	1	0.8%	100.0%
Total		125	100.0%	

Number of missing values = 0



#### **Attachment 1 - Continued**

#### **Summary Report for Post-Service Time**



Time		го	HER TIME ESTIMATE (OTE)	No. of items in	Average Min	e Time in utes	Ratio 100 x
	ID	Type Definition of Time *		common	DERM	OTE	DERMIOTE
F	H4	Priv	Knife to Skin -to- Dressing Applied	30	32.9	27.3	120.4
os	H6	Priv	Knife to Skin -to- Drapes Removed	25	30.4	31.5	96.3
-	H11	Priv	Pt Prepped -to- Drapes Removed	27	29.9	52.2	57.3
	H1 H8	Priv	Pt Positioned -to- Drapes Removed	24	29.5	22.9	128.8
	H10	Priv	Pt Positioned -to- Drapes Removed	17	28.9	20.7	139.6
ж	H13	Priv	Pt Positioned -to- Drapes Removed	23	31.0	25.9	120.1
Σ	H15	Priv	Pt Positioned -to- Drapes Removed	9	39.7	27.9	142.4
z F	H16	Pub	Pt Positioned -to- Dressing Applied	33	29.9	28.9	103.5
βĘÖ	H17	Pub	Surgeon with Pt -to- Drapes Removed	31	29.1	34.3	84.8
RA	H19	Pub	Pt Positioned -to- Drapes Removed	11	21.0	23.9	83.4
E E	H20	Pub	Pt Positioned -to- Dressing Applied	33	29.9	20.2	147.9
0	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	10	32.1	38.5	83.4
	CANS	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	41	33.6	33.9	99.3
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Removed	9	36.9	30.6	120.7
	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	29	30.7	25.0	122.9
2	H9A H0B	Priv/Dov	Pt Positioned to Trans. to Recovery Staff	18	32.3	27.9	79.5
M	H13	Priv Day	Pt Positioned -to- Trans. to Recovery Staff	22	31.4	30.6	104.3
^ 1	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	9	42.4	32.4	131.2
Ρ	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	35	30.2	33.6	89.9
¥0)	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	32	29.1	39.4	74.0
Ë	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	35	31.6	27.5	115.1
Ъ.	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	15	23.0	29.0	79.2
	H20 CANS	Pub & Priv	Pt Positioned -to- Trans. to Recovery Staff	32	30.1	25.5	117.8
	H1	Priv	Pren Anaes -to- Dranes Removed	43	29.4	31.9	91.0
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	27	32.1	57.2	56.2
	H6	Priv	Prep. Anaesto- Drapes Removed	27	32.7	42.7	76.7
ШЫ	H8	Priv	Prep. Anaesto- Drapes Removed	29	31.3	30.7	102.3
Ē	H10	Priv	Prep. Anaesto- Drapes Removed	17	28.9	30.8	94.1
Ĕ	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	25	31.2	37.3	83.5
A HE	H15	Priv	Induction of Anaes -to- Drapes Removed	10	40.2	35.0	114.8
FS 5	H17	Pub	Prep. Anaesto- Dressing Applied	34	29.2	50.2	56.8
AE	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	35	31.6	32.6	96.9
AN	H19	Pub	Prep. Anaesto- Dressing Applied	12	24.9	43.6	57.1
	H20	Pub	Prep. Anaesto- Dressing Applied	35	31.1	35.9	86.7
	CANS	Pub & Priv	Prep. Anaesto- Surg.Leaves Pt	43	33.6	39.1	85.8
	Deloitte	Pub & Priv	Induction of Anaesto- Drapes Removed	9	36.9	37.9	97.4
	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	66	36.4	52.7	69.0
	пр H7	Priv/Dav	Prep. Anaes -to- Trans. to Recovery Stall	22	32.0	27.3	100.7
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	30	32.3	37.1	87.2
Е 2	H9A	Priv	Prep. Anaesto- Trans. to Recovery Staff	19	33.8	51.9	65.1
Σ	H9B	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	24	29.1	40.2	72.4
ມີ	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	27	30.4	64.0	47.5
ΑT	H12	Pub	Prep. Anaesto- Trans. to Recovery Staff	1	30.0	32.5	92.3
ΞQ	H14	Pub	Prep. Anaesto- Trans. to Recovery Staff	30	32.5	48.1	67.5
ES	H16	PIIV	Prep Appes to Trans to Recovery Staff	10	40.2	39.1	102.9
AN N	H17	Pub	Prep. Anaesto- Trans. to Recovery Staff	34	23.2	55.5	51.3
<	H19	Pub	Prep. Anaes -to- Trans. to Recovery Staff	17	24.1	43.2	55.8
	H20	Pub	Prep. Anaesto- Trans. to Recovery Staff	35	31.1	40.9	76.0
	CANS	Pub & Priv	Prep. Anaesto- Trans. to Recovery Staff	44	33.6	42.5	79.0
	WAGroup	Priv	Induction of Anaesto- Trans. to Recovery Staff	38	27.8	28.0	99.3
	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	19	27.6	41.4	66.7
RE	H3 H11	Priv	Anaesthetist with Pt -to- Trans. to Recovery Statt	28	39.1	39.4	99.2 37.0
AT	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	20 25	31.2	40.4	
ΞĘ	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	9	42.4	61.6	68.9
ΞĖ	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	35	31.6	36.2	87.4
ш	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	16	24.1	58.8	40.9
≥ L	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	45	36.5	43.0	84.9
	C'mix	Priv Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staff	52	32.2	42.8	75.2
	Unix Uniel	Day & Other	Anacsmenst with Ft -to- Hanslo Recovery Stall		40.3	54.5	74.0

\* Definition of Time - see Attachment A

\*\* Median ratio of DERM intra time estimates to OPT Unweighted = 120.7 % Weighted (for number of items in common) = 120.7 %

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

PAT	WAYS	FOR		PT ENTE OR	ERS ANAESTHI	OOM	START OP TIME END O		ND OP TIME XFER TO RECOV		XFER FROM RECOV							
SUR ANA	GEON A	AND FIST	PT ENTERS OP SUITE	Anaesth. arrives to talk to Pt	prepares Pt for anaes- cannula/ lines	Anaes. Commence admin/ induction of	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		1	incertion	anaes		1		1	1	1	1	1	1	1		1
Hosp4	H4OST	Priv																
Hosp6	H6OST	Priv								_								
Hosp11	H11OST	Priv													_			
H0Sp1 H0Sp8	HIOPT	Priv						-	i .									
Hosp10	H10OPT	Priv							1									
Hosp13	H13OPT	Priv							÷									
Hosp15	H15OPT	Priv						-	i i					_				
Hosp16 Hosp17	H16OPT	Pub							1									
Hosp18	H18OPT	Priv																
Hosp19	H19OPT	Pub																
Hosp20	H20OPT	Pub																
APHA	APHAOPT	Priv					-											
CANS	CANSOPT	Pub & Priv													_			
Hosp8	H80PT2	Pub & Priv Priv								-								
Hosp9A	H9AOPT2	Priv							1									
Hosp9B	H9BOPT2	Priv/Day							i i									
Hosp13	H13OPT2	Priv																
Hosp15	H15OPT2	Priv							1	1								
Hosp16 Hosp17	H160PT2	Pub																
Hosp18	H180PT2	Priv																
Hosp19	H19OPT2	Pub							1	1								
Hosp20	H20OPT2	Pub																
CANS	CANSOPT2	Pub & Priv													-			
Hosp1	H1OAT	Priv												_				
Hosp6	HEOAT	Priv												-				
Hosp8	H8OAT	Priv																
Hosp10	H10OAT	Priv											1					
Hosp13	H13OAT	Priv																
Hosp15	H15OAT	Pub																
Hosp16	H16OAT	Pub																
Hosp18	H18OAT	Pub																
Hosp19	H19OAT	Pub																
Hosp20	H20OAT	Pub & Priv																
CAnS	CANSOAT	Pub & Priv				-									_			
Deloitte	DTOAT	Pub & Priv																
Hosp5	H5OAT2	Pub & Priv																
Hosp7	H7OAT2	Priv/Day																
Hosp8	H8OAT2	Priv																
Hosp9A	H9AOAT2	Priv																
Hosp9B	H9BOAT2	Priv/Day																
Hosp12	H12OAT2	Pub	-															
Hosp14	H14OAT2	Pub																
Hosp15	H15OAT2	Priv																
Hosp16	H16OAT2	Pub																
Hosp17	H17OAT2	Pub																
Hosp20	H200AT2	Pub																
CANS	CANSOAT2	Pub & Priv																
WAGroup	WAOAT2	Priv																
Hosp2	H2THT	Priv																
Hosp3	H3THT	Pub																
Hosp11	H11THT	Pub																
Hosp15	HISTHU	Priv																
Hosp18	H18THT	Priv																
Hosp19	H19THT	Day & Other																
C'mix -Pub	CMXPUTHT	Priv																
C'mix -Pte	CMXPVTHT	Priv																
IC IIIX-OIII		1111	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.

	Cum.	Percentage	Freq.	Rating
	Percentage			
	0.8%	0.8%	1	3
	3.2%	2.4%	3	4
30%	8.0%	4.8%	6	5
5070	32.0%	24.0%	30	6
	52.8%	20.8%	26	7
25%	80.0%	27.2%	34	8
	93.6%	13.6%	17	9
20%	100.0%	6.4%	8	10
_0/0		100.0%	125	Total





## **Attachment 3 - Continued**

#### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum.
			Percentage
2	3	2.4%	2.4%
3	4	3.2%	5.6%
5	11	8.8%	14.4%
6	26	20.8%	35.2%
7	34	27.2%	62.4%
8	23	18.4%	80.8%
9	13	10.4%	91.2%
10	11	8.8%	100.0%
Total	125	100.0%	

Number of missing values = 0



### **Attachment 3 - Continued**

#### **Summary Report for Stress**



## **Attachment 4 - Links with Other Specialties**

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

Number of Links with Other Specialties									
Specialty	Procedure	Consultation	Total						
эрестану	Items	Items	Items						
Gen. Prac. & Emergency Med.	22	0	22						
Oral and Maxillo-Facial Surgery	2	12	14						
Obstetrics / Gynaecology	0	0	0						
General Surgery	19	42	61						
Cardio Thoracic Surgery	0	0	0						
Neurosurgery	0	15	6						
Orthopaedic Surgery	0	45	6						
Paediatric Surgery	0	11	11						
Plastic Surgery	36	0	36						
Urology	0	0	0						
Vascular Surgery	2	0	2						
Ophthalmology	1	0	1						
Otolaryngology (Head & Neck Surgery)	0	3	3						
Anaesthesia	0	45	45						
Paediatric / Thoracic Medicine	0	42	42						
General Medicine	2	26	28						
Cardiology, Renal, ICU	0	0	0						
Radiation, Oncology	2	6	8						
Gastroenterology	0	38	38						
Neurology	0	45	45						
Haematology, Medical Oncology	0	7	7						
Psychiatry	0	34	34						
Total	54	45	99						

umber	of	Links	with	Other	S	pecialties
-------	----	-------	------	-------	---	------------

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

# **Paediatric Medicine / Thoracic Medicine**

# **Summary Status Report**

September 1, 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 and Thoracic Medicine Consensus Group.

The Paediatric and Thoracic Medicine Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 94 items. These comprised 31 procedure items and 63 consultation items.

Analysis of this information showed:

- The median ratio of Paediatric and Thoracic Medicine's intra time estimates to NCCH's Theatre Times Database observed procedure times was 118.3%. This implies a slight tendency to over estimate intra times,
- The group gave significantly lower ranks to procedure items than to consultation items (p < 0.01),
- There was no bias in the ranking of either link items or potential core items,
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 3.5. 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 Paediatric and Thoracic Medicine's rankings and ratings with those of the other groups at a similar stage of development.
- Consultation items were given significantly greater imputed relative values<sup>1</sup> than procedure items.
- There was no significant difference in imputed relative values between link items and non link items nor between good map items and poor/no map items.
- The correlation between the imputed relative values for Paediatric and Thoracic Medicine and both schedule fee and CPT RV were lower than anticipated. This appears to be due to the effect of one or two extreme outliers rather than a structural difference.

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

<sup>&</sup>lt;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 and Thoracic Medicine are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 33 minutes and the mean total time was 49 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1										
	Pre Intra Post									
	Service	Service	Service	Time						
Mean	6	33	10	49						
SD	5	26	10	31						
Min	0	0	1	6						
Max	30	150	60	195						

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.

**Average Times** 



#### Figure 2.1

**Proportion of Time** 

A summary breakdown is also provided in Table 2.2.

Table 2.2										
Average	Pre	Intra	Post	Total						
Times	Service	Service	Service	Time						
Procedure Items	10.5	21.4	14.6	46.5						
Consultation Items	3.7	38.7	7.9	50.3						
Total Items	5.9	33.0	10.1	49.0						

Paediatric and Thoracic Medicine'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 and Thoracic Medicine's intra time estimates to the observed procedure times was 118.3%. This implies a slight 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 and Thoracic Medicine are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 8.2 for cognitive skill, 6.1 for technical skill and 6.5 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

Table 3.1										
	Cognitive	Technical	Stress	Total						
	Skill	Skill		Intensity						
Mean	8.2	6.1	6.5	20.8						
SD	2.2	1.8	2.5	5.5						
Min	2.0	1.0	1.0	5.0						
Max	10.0	10.0	10.0	29.0						

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

Table 3.2										
Intensity	Cognitive	Technical	Stress	Total						
Ratings	Skill	Skill		Intensity						
Procedure Items	5.9	5.7	5.5	17.1						
Consultation Items	9.3	6.2	7.0	22.5						
Total Items	8.2	6.1	6.5	20.8						

A summary breakdown is also provided in Table 3.2.

<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 (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 lower ranks than the consultation items (Sum of ranks test, p < 0.01).

Table 4.1										
Type of Item	Number	Ranking								
	Reviewed	Highest	Lowest	Average						
Procedure	31	1	94	58.2						
Consultation	63	2	91	42.2						
Total	94	1	94	47.5						

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 and Thoracic Medicine Consensus Group assessed 85 link items. These comprised all 63 of their consultation items and 22 of the 31 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 not significantly different from those given to non-link items.

Table 4.2										
Type of Item	Number		Ranking							
	Reviewed	Highest	Lowest	Average						
Consultation	63	2	91	42.2						
Procedure-Link	22	9	94	61.3						
Total Link	85	2	94	47.1						
Non-Link (Procedure)	9	1	93	50.8						
Total	94	1	94	47.5						

Good maps of Paediatric and Thoracic Medicine's items to CPT were available for 14 of their 94 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	Ranking								
	Reviewed	Highest	Lowest	Average						
Good Map	14	1	90	54.0						
Poor/Non Map	80	2	94	46.4						
Total	94	1	94	47.5						

## 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 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 Paediatric and Thoracic Medicine is 1 to 94.

By dividing imputed relative values by time we can impute <u>relative</u> 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 1.96. 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 3.5.

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 Paediatric and Thoracic Medicine'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 consultation items were given significantly greater imputed relative values than the procedure items (t tests, p < 0.05 using untransformed data, p < 0.01 using log transformed data). There were no significant differences between the imputed relative values given to link items and non-link items, nor between those given to good map items and poor/no map items.

Table 5.1										
	Number	IR	Vs							
Type of Item	Reviewed	Mean <u>+</u> SD	Low High							
Consultation	63	3931 <u>+</u> 2415	396 8601							
Procedure	31	2763 <u>+</u> 2810	150 14145							
Link	85	3506 <u>+</u> 2393	150 8601							
Non-link	9	3922 <u>+</u> 4253	290 14145							
Good Map	14	3377 <u>+</u> 3685	420 14145							
Poor/No Map	80	3576 <u>+</u> 2387	150 8601							
Total	94	3546 <u>+</u> 2597	150 14145							

A plot of Paediatric and Thoracic Medicine's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is not good but this is largely due to two outliers (MBS Items 12203 &13309). When they are removed, the fit improves dramatically (from  $R^2$ =0.21 to 0.44)<sup>4</sup>.

 $^4\,$  An R  $^2$  value of 0.21 means that the line explains 21% of the variation. An R  $^2$  value of 0.44 means that the line explains 44% of the variation.



We would 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 indeed much better. MBS Items 12203 and 13309 do not have nearly as much effect.



A plot of Paediatric and Thoracic Medicine's IRVs against CPT RV is set out in Figure 5.3. The fit is not good but this is largely due to one outlier (MBS Item 13309). When this outlier is removed, the fit improves dramatically (from  $R^2=0.27$  to 0.63).



As for Schedule Fee, we would expect the magnitude of error deviation to increase with CPT RV. Accordingly, a log/log plot is also provided (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**



## **Attachment 1 - Continued**

#### **Summary Report for Intra-Service Time**

Time	Freq.	Percentage	Cum. Percentage														
0	6	6.4%	6.4%														
4	1	1.1%	7.4%														
5	9	9.6%	17.0%	100/													
10	8	8.5%	25.5%	1070 -									1				
15	6	6.4%	31.9%	16% -								-			$-\!/$		
20	12	12.8%	44.7%	14% -										_/	/		
25	1	1.1%	45.7%								1						
30	16	17.0%	62.8%	12% -									$\vdash$	-			
40	1	1.1%	63.8%	10% -						_		$\boldsymbol{V}$		-			
45	12	12.8%	76.6%	00/													
60	11	11.7%	88.3%	8% -			=									-	
75	10	10.6%	98.9%	6% -			-		$\checkmark$			-			H	-	
150	1	1.1%	100.0%	1%					1								
Total	94	100.0%		770				1									
Number of mis	sing values	= 0		2% -		$\checkmark$									H	-	
	3	-		0% -							Ļ		Ļ <b>E</b>		ц <b>ш</b>	ч	Ļ
					0	4	5	10	15	20	25	30	40	45	60	75	150

Time (Minutes)

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

### **Attachment 1 - Continued**

#### **Summary Report for Post-Service Time**



#### **Attachment 2: COMPARISON OF PAEDIATRIC AND THORACIC MEDICINE INTRA TIME ESTIMATES WITH OTHER ESTIMATES**

OT		от	HER TIME ESTIMATE (OTE)	No. of	Average Min	Ratio 100	
Time	ID	Priv/Pub/ Day Surg	Definition of Time	common	PT	OTE	PT/OTE
	H1	Priv	Op Start to Op End	3	21.7	14.8	146.5
	H4	Priv	Op Start to Op End	3	21.7	29.7	72.9
	H6	Priv	Op Start to Op End	0			
*	H8	Priv	Surgeon Start to Drapes Removed	2	32.5	25.0	130.0
E	H9A	Priv	Inpatient, Surgery Start to Surgery Finish	2	17.5	45.5	38.5
0	H9B	Day	Day Surgery, Surgery Start to Surgery Finish	3	33.3	16.1	207.2
ME	H10	Priv	Op Start to Op End	0			
F	H11	Priv	Knife to Skin - Application of Dressing	1	30.0	27.0	111.1
ŏ	H13	Priv	Surgeon Start to Surgeon Finish	0			
F	H15	Priv	Op Start to Op End	4	27.5	19.6	140.4
R.	H16	Pub	Proc Start to Proc End	4	35.0	25.9	135.1
H H	H17	Pub	Surgical Start to Surgical End	1	10.0	39.0	25.6
0	H18	Priv	Proc Start to Proc End	4	32.5	27.5	118.3
	H19	Pub	Positioning to Dressings Applied	4	35.0	14.7	237.8
	APHA	Priv Dub & Driv	Procedure Time	8	27.5	33.9	81.1
	Deloitte			2	20.0	20.0	100.0
<b>7</b>	H8	Priv	Surgeon Start to Xfer from OR	2	32.5	30.0	108.3
δĻ	H13	Priv	Surgeon Start to Xter from OR	0	07.5	04.0	100.1
Ę jo	H15	Priv	Op Start to Recovery Admission	4	27.5	21.3	129.4
2.8	H16	Pub	Proc Start to Recovery Admission	4	35.0	29.5	118.7
E E	H17	Pub	Surgical Start to Xfer from OR	1	10.0	41.0	24.4
0 ₽	H18	Priv	Proc Start to Xter from OR	5	29.0	29.6	98.0
	H19	Pub Dub 8 Daia	Positioning to Ex Theatre	3	31.7	19.5	162.8
	MBS	Pub & Priv	Anaesthetic Time	11	31.8	46.4	68.6
	H1	Priv	Anaesthetic Start to Op End	3	21.7	17.7	122.4
5	H4	Priv	Anaesthetic Start to Op End	3	21.7	40.2	53.9
LAG		Priv	Anaesthetic Start to Surgery End	1	25.0	25.0	100.0
0		Priv Driv	Anaesthetic Start to Op End	0	20 F	20 F	100.0
ME		Priv	Inpatient in A Pay to Surgery Finish	Z	32.5	32.3	100.0
F	ПЭА		Day Surgary Apparthetist Start to Surgary Finish	2	22.2	40.0	126.4
01	H10	Day	Anaesthetic Start to On End	0	55.5	24.4	130.4
Ψ	H13	Priv	Anaesthetic Start to Surgeon End	0			
ST .	H15	Priv	Anaesthetic Start to On End	4	27.5	22.3	123.2
AE:	H16	Pub	Anaesthetic Start to Proc End	4	35.0	34.2	102.5
Ž	H17	Pub	Anaesthetic Start to Surgical End	. 0	00.0	01.2	102.0
4	H18	Priv	Anaesthetic Start to Proc End	5	29.0	27.4	105.8
	H19	Pub	Anaesthetic Start to Dressings Applied	5	30.0	24.6	121.9
	Deloitte	Pub & Priv	Anaesthetic Time	2	20.0	25.0	80.0
	H8	Priv	Patient in Theatre to Xfer from OR	2	32.5	37.5	86.7
ы Ш	H11	Priv	Anaesthetic Start to Xfer to Recovery	2	25.0	31.0	80.7
M	H12	Pub	Anaesthetic Start to Xfer to Recovery	0			
	H13	Priv	Anaesthetic Start to Xfer from OR	0			
12	H14	Pub	Anaesthetic Start to Recovery Admission	9	25.0	56.0	44.6
ΗŘ	H15	Priv	Anaesthetic Start to Recovery Admission	4	27.5	24.0	114.8
ST ()	H16	Pub	Anaesthetic Start to Recovery Admission	4	35.0	37.8	92.6
AE	H17	Pub	Anaesthetic Start to Xfer from OR	0			
AN	H18	Priv	Anaesthetic Start to Xfer from OR	5	29.0	33.6	86.3
	H19	Pub	Anaesthetic Start to Ex Theatre	6	35.0	31.2	112.3
F	H2	Priv	Total Time in Theatre	5	25.0	28.2	88.7
표	H3	Priv	Total Time in Theatre	0			
ш	H7	Day	Total Time in Theatre	2	37.5	22.1	169.9
TR	H11	Priv	Dress, scrub etc. to Xfer to Recovery	2	25.0	45.5	55.0
A.	H15	Priv	Theatre Reception to Recovery Admission	4	27.5	33.5	82.2
臣	H19	Pub	In Op Suite to Ex Theatre	6	35.0	45.2	77.5
z	C'mix Pub	Pub	Casemix Public Theatre Time	11	36.4	29.0	125.6
Ш	C'mix Priv	Priv	Casemix Private Theatre Time	12	27.5	23.3	117.9
Σ	C'mix Other	Day & Other	Casemix Other Theatre Time	6	24.2	17.6	137.1
T	WA	Priv	WA Group Total Time in Theatre	11	25.9	25.9	100.0

Median ratio of PT intra time estimates to OPT Unweighted = 118.3 %

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											
2	2	2.1%	2.1%											
3	2	2.1%	4.3%											
4	3	3.2%	7.4%	45%										100%
5	6	6.4%	13.8%	400/										0.0%
6	10	10.6%	24.5%	40%									-//	- 90 /8
7	7	7.4%	31.9%	35%									Å	+ 80%
8	10	10.6%	42.6%										, 	70%
9	14	14.9%	57.4%	30%									-	
10	40	42.6%	100.0%	25%										+ 60%
Total	94	100.0%		2070										- 50%
Number of miss	sing values =	0		20%							-/		-	400/
				150/										+ 40%
				1570										- 30%
				10%									-	20%
				50/				$\frown$						2070
				5%									-	+ 10%
				0%					Ļ <b>I</b> ,				_	⊥ 0%
					1	2	3	4	Rating	6	7	8	9	

### **Attachment 3 - Continued**

#### Summary Report for Technical skill etc.



### **Attachment 3 - Continued**

#### **Summary Report for Stress**


### **Attachment 4 - Links with Other Specialties**

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

On a cialtur	Procedure	Consultation	Total
Speciality	Items	Items	Items
Gen. Prac. & Emergency Med.	11	0	11
Facio-max Surgery	0	16	16
Obstetrics / Gynaecology	0	0	0
General Surgery	0	0	0
Cardio Thoracic Surgery	5	0	5
Neurosurgery	1	23	24
Orthopaedic surgery	0	63	63
Paediatric Surgery	1	0	1
Plastic Surgery	0	11	11
Urology	0	0	0
Vascular Surgery	0	0	0
Ophthalmology	0	0	0
ENT	2	0	2
Anaesthesia	2	63	65
Dermatology	0	0	0
General Medicine	10	46	56
Cardiology, Renal, ICU	2	0	2
Radiation, Oncology	0	0	0
Gastroenterology	0	0	0
Neurology	0	63	63
Haematology, Medical Oncology	2	0	2
Psychiatry	0	53	53
Total	22	63	85

#### Number of Links with Other Specialties

## 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

## Endocrinology, General Medicine,

# Geriatrics, Immunology, Infectious Diseases,

Nuclear Medicine, Occupational Medicine,

### **Rehabilitation Medicine and Rheumatology**

# **Summary Status Report**

October 8, 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 Extended General Medicine Consensus Group.

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 117 items. These comprised 71 procedure items and 46 consultation items.

Analysis of this information showed:

- The median ratio of the Consensus Group's intra time estimates to NCCH's Theatre Times Database observed procedure times was 79.5%. This shows a tendency to under estimate intra times,
- The group gave very much higher ranks to consultation items than to procedure items, significantly higher ranks to link items than to non-link items and significantly lower ranks to good map items than 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 6.23. Although this is higher than the median observed for specialties so far examined, in terms of deviations in rates of pay, it should still be possible to align Extended General Medicine's rankings and ratings with those of the other groups.
- The consultation items were given much higher imputed relative values<sup>1</sup> than the procedure items, the link items were given significantly greater imputed relative values than the non-link items and good map items were given significantly lower imputed relative values than poor/no-map items.
- The correlation between the imputed relative values for Extended General Medicine and both the Medicare Benefits Schedule Fee and CPT RV were much lower than anticipated ( $R^2 = 8\%$  and  $R^2 = 51\%$  respectively).

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

<sup>&</sup>lt;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.

**Proportion of Time** 

# Section 2 Summary of Time Estimates

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

The mean intra service time was 29 minutes and the mean total time was 44 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1						
	Pre	Intra	Post	Total		
	Service	Service	Service	Time		
Mean	6	29	9	44		
SD	5	22	6	25		
Min	0	0	0	4		
Max	20	75	30	105		

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.



**Average Times** 



A summary breakdown is also provided in Table 2.2.

	Table	2.2		
Average	Pre	Intra	Post	Total
Times	Service	Service	Service	Time
Procedure Items	7.7	15.8	8.6	32.1
Consultation Items	4.3	48.1	8.7	61.1
Total Items	6.4	28.5	8.6	43.5

Extended General Medicine'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 Extended General Medicine's intra time estimates to the observed procedure times was 79.5%. This shows a tendency by this Consensus Group to under 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 Extended General Medicine are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 7.0 for cognitive skill, 6.6 for technical skill and 4.5 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

		l able 3.7	1	
	Cognitive	Technical	Stress	Total
	Skill	Skill		Intensity
Mean	7.0	6.6	4.5	18.1
SD	2.0	2.4	2.2	5.7
Min	0.5	0.0	0.5	4.0
Max	9.0	9.2	9.0	25.0

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.





A summary breakdown is also provided in Table 3.2.

Average						
Intensity	Cognitive	Technical	Stress	Total		
Ratings	Skill	Skill		Intensity		
Procedure Items	5.7	5.1	4.0	14.8		
Consultation Items	8.8	9.0	5.2	23.0		
Total Items	7.0	6.6	4.5	18.1		

Table 3.2

<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 (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 consultation items were given very much higher ranks than the procedure items (sum of ranks test, p < 0.001).

Table 4.1					
Type of Item	Number	Ranking			
	Reviewed	Highest	Lowest	Average	
Procedure	71	10	117	78.42	
Consultation	46	1	84	29.02	
Total	117	1	117	59.00	

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 Extended General Medicine Consensus Group assessed 92 link items. These comprised all 46 of their consultation items and 46 of the 71 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 significantly higher than those given to non-link items (sum of ranks test, p < 0.01).

Table 4.2					
Type of Item	Number		Ranking		
	Reviewed	Highest	Lowest	Average	
Consultation-Link	46	1	84	29.02	
Procedure-Link	46	10	117	78.35	
Total Link	92	1	117	53.68	
Non-Link (Procedure)	25	36	114	78.56	
Total	117	1	117	59.00	

Good maps of Extended General Medicine's items to CPT were available for 13 of their 117 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). This means that good map items (i.e. potential core items) are not spread evenly throughout the ranks.

Type of Item	Number	Ranking		
	Reviewed	Highest	Lowest	Average
Good Map	13	45	117	82.7
	104	1	116	56.0
Total	117	1	117	59.0

#### 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 Extended General Medicine is 1 to 78.4.

By dividing imputed relative values by time we can imput<u>erelative</u> 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 5.06. 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 6.23.

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 Extended General Medicine'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 Nonlink 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 much greater imputed relative values than the procedure items (t tests, p< 0.001). The link items were given significantly greater imputed relative values than the non-link items (t tests, p < 0.01), and good map items were given significantly lower imputed relative values than poor/no-map items (t tests, p < 0.01).

	Number	IRVs		
Type of Item	Reviewed	Mean <u>+</u> SD	Low High	
Consultation	46	15775 <u>+</u> 6305	4077 26202	
Procedure	71	5082 <u>+</u> 4283	334 22440	
Link	92	10501 <u>+</u> 7678	334 26202	
Non-link	25	4814 <u>+</u> 3320	1008 11160	
Good Map	13	4328 <u>+</u> 3060	334 9765	
Poor/No Map	104	9906 <u>+</u> 7499	576 26202	
Total	117	9286 <u>+</u> 7349	334 26202	

A plot of Extended General Medicine'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 only 8% of the variation in imputed relative values while the line of "Best Fit Through the Origin" fails to explain any of the variation.

It must be acknowledged that comparisons of Extended General Medicine's imputed relative values against schedule fee may not be appropriate. Many of their procedures have significant material components (e.g. MBS Item 16015).



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, while still poor, is better than that for IRV against Schedule Fee, explaining 32% of the variation as against 8% previously.





A plot of Extended General Medicine's IRVs against CPT RV is set out in Figure 5.3. The fit is poor ( $R^2 = 51\%$ ). The clear outlier is MBS Item 30094 and when this is removed,  $R^2$  improves to 65%.



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 is not as good as that for IRV against CPT RV explaining 47% of the variation as against 51%.



### **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**

			Cum.
Time	Freq.	Percentage	Percentage
0	1	0.9%	0.9%
2	14	12.0%	12.8%
3	25	21.4%	34.2%
4	5	4.3%	38.5%
5	34	29.1%	67.5%
7	2	1.7%	69.2%
8	3	2.6%	71.8%
10	21	17.9%	89.7%
15	7	6.0%	95.7%
20	5	4.3%	100.0%
Total	117	100.0%	



#### **Attachment 1 - Continued**

#### Summary Report for Intra-Service Time



#### **Attachment 1 - Continued**

#### Summary Report for Post-Service Time

٦	Time	Freq.	Percentage Cur	
				Percentage
	0	1	0.9%	0.9%
	2	2	1.7%	2.6%
	3	7	6.0%	8.5%
	4	8	6.8%	15.4%
	5	36	30.8%	46.2%
	6	4	3.4%	49.6%
	7	3	2.6%	52.1%
	8	6	5.1%	57.3%
	10	24	20.5%	77.8%
	11	4	3.4%	81.2%
	15	14	12.0%	93.2%
	20	5	4.3%	97.4%
	25	1	0.9%	98.3%
	30	2	1.7%	100.0%
Total		117	100.0%	



#### COMPARISON OF GENERAL MEDICINE (GEN MED) Extended General Medicine Summary Report INTRA TIME ESTIMATES WITH OTHER ESTIMATES

		OTHER TIME ESTIMATE (OTE)					Ratio 100
Time				items in	Average Time in Minutes		
l	ID	Туре	Definition of Time	common	GENMED	OTE	
	H1	Priv	Op Start to Op End	5	14.0	14.3	97.6
1	H4	Priv	Op Start to Op End	4	15.0	15.2	98.6
1	H6	Priv	Op Start to Op End	1	10.0	20.0	50.0
1	H8	Priv	Surgeon Start to Drapes Removed	5	15.0	16.1	93.2
Ê.	H9A	Priv	Inpatient, Surgery Start to Surgery Finish	9	17.6	27.1	64.9
PO	H9B	Day Driv	Day Surgery, Surgery Start to Surgery Finish	4	13.8	12.0	114.4
Ш Ш	H11	Priv	Knife to Skin - Application of Dressing	4	23.0	28.6	124.1 59.4
Ξ	H13	Priv	Surgeon Start to Surgeon Finish	3	30.0	20.0	104.5
z	H15	Priv	Op Start to Op End	10	20.0	24.0	83.2
Ĕ	H16	Pub	Proc Start to Proc End	8	20.0	25.1	79.8
RA	H17	Pub	Surgical Start to Surgical End	7	14.3	26.6	53.7
E E	H18	Priv	Proc Start to Proc End	11	19.6	15.8	123.7
0	H19	Pub	Positioning to Dressings Applied	8	13.8	17.4	79.1
I	H20	Pub	Preparation/Positioning to End Dressings	13	16.2	22.5	71.9
I		Priv Pub & Priv	On Start to On Einish	5	10.0	28.4	50.3
1	Deloitte	Pub & Priv	Procedure Time	7	13.3	22.9	62.5
	H8	Priv	Surgeon Start to Xfer from OR	6	14.2	16.4	86.5
Ш 2	H13	Priv	Surgeon Start to Xfer from OR	4	27.5	33.6	81.8
Σ	H15	Priv	Op Start to Recovery Admission	10	20.0	26.4	75.8
۲ <u>۶</u>	H16	Pub	Proc Start to Recovery Admission	8	20.0	29.1	68.8
5 F	H17	Pub	Surgical Start to Xfer from OR	8	14.4	30.6	47.0
- <u>A</u> C	H18	Priv	Proc Start to Xfer from OR	11	18.6	15.6	119.3
Ш	H19	Pub	Positioning to Ex Theatre	8	13.8	22.5	61.2
ō		Pub & Priv	Operation Start to Anaesthetist Finish	13	13.3	20.2	57.6
	MBS	Pub & Priv	Anaesthetic Time	19	22.1	26.1	84.9
1	H1	Priv	Anaesthetic Start to Op End	5	14.0	19.3	72.5
1	H4	Priv	Anaesthetic Start to Op End	6	13.3	21.3	62.7
_	H5	Priv	Anaesthetic Start to Surgery End	2	10.0	21.5	46.5
AT	H6	Priv	Anaesthetic Start to Op End	1	10.0	25.0	40.0
<u>e</u>	H8	Priv	Patient in Theatre to Drapes Removed	5	15.0	20.0	74.9
Ξ	H9A	Priv	Inpatient in A. Bay to Surgery Finish	9	17.6	29.8	58.9
F	H9B	Day	Apposite Start to Op End	5	14.0	20.9	67.1 100.1
Ê	H13	Priv	Anaesthetic Start to Surgeon End	4	23.0	34.9	78.7
뿟	H15	Priv	Anaesthetic Start to Op End	10	20.0	26.7	74.9
ST	H16	Pub	Anaesthetic Start to Proc End	9	19.4	35.8	54.3
IAE	H17	Pub	Anaesthetic Start to Surgical End	6	14.2	38.4	36.9
A	H18	Priv	Anaesthetic Start to Proc End	11	19.6	18.4	106.0
1	H19	Pub	Anaesthetic Start to Dressings Applied	9	13.9	24.7	56.2
I	H20	Pub Dub & Driv	Anaesthetist Start to End Dressings	12	15.0	31.7	47.3
1	CANS Doloitto	Pub & Priv	Anaesthetist Start to Operation Finish	6	13.3	23.1	57.8
ନ	H8		Patient in Theatre to Xfer from OR	5	15.0	22.0	67.6
Ē	H11	Priv	Anaesthetic Start to Xfer to Recovery	6	16.0	36.2	46.1
NO.	H12	Pub	Anaesthetic Start to Xfer to Recovery	2	17.5	28.9	60.6
5	H13	Priv	Anaesthetic Start to Xfer from OR	4	27.5	38.6	71.2
Ξ	H14	Pub	Anaesthetic Start to Recovery Admission	13	18.7	41.5	45.0
F	H15	Priv	Anaesthetic Start to Recovery Admission	10	20.0	29.1	68.7
E	H16	Pub	Anaesthetic Start to Recovery Admission	8	20.0	37.5	53.4
뿐	H17	Pub	Anaesthetic Start to Xfer from OR	6	14.2	44.8	31.7
ST	П 10 H10	Pliv	Anaesthetic Start to Ex Theatre	10	13.0	21.4	12.4
ĮAE	H20	Pub	Anaesthetist Start to Admit Recovery/ICU	12	15.0	38.1	39.4
Ā	CANS	Pub & Priv	Anaesthetist Start to Anaesthetist Finish	6	13.3	26.3	50.6
Ē	H2	Priv	Total Time in Theatre	10	20.5	28.2	72.8
E	H3	Priv	Total Time in Theatre	1	15.0	10.8	139.5
Ц Ш	H7	Day	Total Time in Theatre	5	13.0	12.6	102.9
TR	H11	Priv	Dress, scrub etc. to Xfer to Recovery	6	16.7	51.3	32.5
EA	H15	Priv	I heatre Reception to Recovery Admission	10	20.0	39.9	50.1
臣	C'miy Dub	Pub	Casemix Public Theatre Time	17	13.9	46.9	29.6
Z	C'mix Pub	Priv	Casemix Fublic Theatre Time	10	10.7	40.7 20 A	41.0 RO 2
Ψ	C'mix Other	Day & Other	Casemix Other Theatre Time	7	10.5	20.0	104 7
Ē	WA	Priv	WA Group Total Time in Theatre	16	17.2	21.6	79.7

\* Median ratio of GENMED intra time estimates to OPT

(excluding H4, H6, H9A, H9B and H11) Unweighted = 79.8 %

Weighted (for number of items in common) = 79.5 %

### **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	1	0.9%	0.9%	35%
3	3	2.6%	3.4%	0070
4	12	10.3%	13.7%	30%
5	16	13.7%	27.4%	0070
6	18	15.4%	42.7%	25%
7	9	7.7%	50.4%	2070
7.5	3	2.6%	53.0%	20%
8	8	6.8%	59.8%	2070
8.5	10	8.5%	68.4%	15%
9	37	31.6%	100.0%	1070
Total	117	100.0%		10%



#### **Attachment 3 - Continued**

#### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum.
			Percentage
0	1	0.9%	0.9%
0.5	1	0.9%	1.7%
2	2	1.7%	3.4%
3	8	6.8%	10.3%
4	17	14.5%	24.8%
5	11	9.4%	34.2%
6	14	12.0%	46.2%
7	9	7.7%	53.8%
8	7	6.0%	59.8%
8.5	4	3.4%	63.2%
8.7	6	5.1%	68.4%
9	16	13.7%	82.1%
9.2	21	17.9%	100.0%
Total	117	100.0%	



#### **Attachment 3 - Continued**

#### **Summary Report for Stress**



# **Attachment 4 - Links with Other Specialties**

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

On a status	Procedure	Consultation	Total
Specialty	Items	Items	Items
Gen. Prac. & Emergency Med.	19	0	19
Oral and Maxillo-Facial Surgery	0	15	15
Obstetrics / Gynaecology	5	0	5
General Surgery	2	0	2
Cardio Thoracic Surgery	1	0	1
Neurosurgery	1	19	20
Orthopaedic Surgery	1	46	47
Paediatric Surgery	0	0	0
Plastic Surgery	0	10	10
Urology	4	0	4
Vascular Surgery	0	0	0
Ophthalmology	1	0	1
ENT	0	0	0
Anaesthesia	5	46	51
Dermatology	2	0	2
Paediatric / Thoracic Medicine	10	46	56
Cardiology, Renal, ICU	12	0	12
Radiation, Oncology	0	0	0
Gastroenterology	5	0	5
Neurology	1	46	47
Haematology, Medical Oncology	2	0	2
Psychiatry	0	46	46
Total	46	46	92

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

## **Cardiology, Renal Medicine and ICU**

### **Summary Status Report**

November 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 Cardiology, Renal Medicine and ICU Consensus Group.

The Cardiology, Renal Medicine and ICU Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 98 items. These comprised 73 procedure items and 25 consultation items.

Analysis of this information showed:

- The median ratio of Cardiology, Renal Medicine and ICU's intra time estimates to NCCH's Theatre Times Database observed procedure times was124.5%. This implies a tendency to over estimate intra times.
- The group gave significantly higher ranks to the procedure items than to the consultation items (p < 0.05).
- The ranks given to link items were much lower than those given to non-link items (p < 0.001).
- 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 5.0. 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 Cardiology, Renal Medicine and ICU's rankings and ratings with those of the other groups.
- Consultation items were given significantly lower imputed relative values than procedure items.
- The link items were given very much lower imputed relative values than the non link items. The range in imputed relative values for link items lacks high values which could cause problems with alignment.
- 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 Cardiology, Renal Medicine and ICU and schedule fee was strong ( $R^2 = 91\%$ ). CPT RV was also well correlated with IRV ( $R^2 = 88\%$ ). 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>&</sup>lt;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 Cardiology, Renal Medicine and ICU are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 47 minutes and the mean total time was 72 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1							
	Pre	Intra	Post				
	Service	Service	Service	<b>Total Time</b>			
Mean	10	47	15	72			
SD	7	42	11	51			
Min	0	0	0	10			
Max	30	200	75	250			

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



Average Times

**Proportion of Time** 

Table 2.2						
Average	Pre	Intra	Post	Total		
Times	Service	Service	Service	Time		
Procedure Items	12.2	50.3	18.0	80.5		
Consultation Items	4.1	36.2	6.5	46.8		
Total Items	10.2	46.7	15.1	72.0		

A summary breakdown is also provided in Table 2.2.

Cardiology, Renal Medicine and ICU '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 Cardiology, Renal Medicine and ICU 's intra time estimates to the observed procedure times was 124.5%. This implies a tendency by this Consensus Group to over estimate their intra times. A more detailed analysis is provided in Attachment 2.

#### **Summary of Intensity Ratings** Section 3

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

The mean ratings were 7.3 for cognitive skill, 5.7 for technical skill and 5.8 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

Table 3.1							
	Cognitive	Technical	Stress	Total			
	Skill	Skill		Intensity			
Mean	7.3	5.7	5.8	18.8			
SD	1.8	2.1	2.3	5.0			
Min	4.0	1.0	0.0	6.0			
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. They are provided for procedure items, consultation items and all items.

**Average Intensities** 



#### Figure 3.1

A summary breakdown is also provided in Table 3.2.

Table 3.2							
Intensity	Cognitive	Technical	Stress	Total			
Ratings	Skill	Skill		Intensity			
Procedure Items	6.8	6.2	6.1	19.1			
Consultation Items	8.9	4.4	4.9	18.2			
Total Items	7.3	5.7	5.8	18.8			

- <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	Ranking		
	Reviewed	Highest	Lowest	Average
Procedure	73	1	98	46.0
Consultation	25	15	96	59.8
Total	98	1	98	49.5

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 Cardiology, Renal Medicine and ICU Consensus Group assessed 68 link items. These comprised all 25 of their consultation items and 43 of the 73 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		Ranking		
	Reviewed	Highest	Lowest	Average	
Consultation	25	15	96	59.8	
Procedure-Link	43	12	98	56.5	
Total Link	68	12	98	57.7	
Non-Link (Procedure)	30	1	92	30.9	
Total	98	1	98	49.5	

Good maps of Cardiology, Renal Medicine and ICU items to CPT were available for 19 of their 98 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 difference was not significant. This implies that good map items (i.e. potential core items) are well spread throughout the ranks.

Table 4.3				
Type of Item	Number	Ranking		
	Reviewed	Highest	Lowest	Average
Good Map	19	3	98	45.9
Poor/Non Map	79	1	96	50.4
Total	98	1	98	49.5

#### 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 Cardiology, Renal Medicine and ICU is 1 to 125. This is largely due to an isolated extreme low value. When this is removed the ratio becomes 1 to 62.

By dividing imputed relative values by time we can imput<u>eelative</u> 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 5.0.

The second of these ranges in relative rates of pay is slightly higher than the median observed for specialties examined so fa<sup>3</sup>. The range is not the result of a small number of extreme values and is therefore robust. In terms of deviations in rates of pay, it should be possible to align Cardiology, Renal Medicine and ICU'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 < 0.05). 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. This could cause problems with alignment. There was no significant difference between the imputed relative values given to good ma items and those given to poor/no map items.

	Number	IRVs			
Type of Item	Reviewed	Mean <u>+</u>	SD	Low	High
Consultation	25	2031 <u>+</u>	1190	384.0	4320.0
Procedure	73	3695 <u>+</u>	3715	130.0	16200.0
Link	68	2140 <u>+</u>	1174	130.0	5625.0
Non-link	30	5833 <u>+</u>	4925	660.0	16200.0
Good Map	19	3593 <u>+</u>	3846	130.0	15750.0
Poor/No Map	79	3193 <u>+</u>	3224	384.0	16200.0
Total	98	3270 <u>+</u>	3336	130.0	16200.0

Tab	le	5.1	

A plot of Cardiology, Renal Medicine and ICU's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is good (R 0.91)<sup>4</sup>. However, there is a significant departure from a linear relationship through the origin. There are also a number of outliers which should be investigated. These comprise MBS item numbers 35305, 38270 and 38603.

<sup>4</sup> An R<sup>2</sup> value of 0.91 means that the line explains 91% of the variation.





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 log (IRV) against log (Schedule Fee). This is done in Figure 5.2. The fit is not as good as in the graph of Figure 5.1 above. This suggests a non-linear relationship between IRV and schedule fee. There are again a number of outliers which should be investigated. These are MBS item numbers 11700, 11701, 11715 and 13708 in addition to 38603, which was mentioned previously.



Figure 5.2

A plot of Cardiology, Renal Medicine and ICU's IRVs against CPT RV is set out in Figure 5.3. The fit is very good ( $\vec{R} = 0.88$ ) and the results are consistent with a simple proportional relationship between the scales.
proportional relationship between the scales



Figure 5.3

A log/log plot is also provided (Figure 5.4). The fit is very similar explaining 87% of t variation. There are two outliers which may need to be investigated. They are MBS item numbers 11701 and 13879.



#### 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	6	6.1%	6.1%
3	11	11.2%	17.3%
5	23	23.5%	40.8%
10	26	26.5%	67.3%
15	18	18.4%	85.7%
20	10	10.2%	95.9%
28	1	1.0%	96.9%
30	3	3.1%	100.0%
Total	98	100.0%	



## **Attachment 1 - Continued**

#### Summary Report for Intra-Service Time



## **Attachment 1 - Continued**

#### Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum.
			Percentage
0	1	1.0%	1.0%
3	9	9.2%	10.2%
5	10	10.2%	20.4%
8	2	2.0%	22.4%
10	30	30.6%	53.1%
15	16	16.3%	69.4%
20	13	13.3%	82.7%
29	1	1.0%	83.7%
30	12	12.2%	95.9%
39	1	1.0%	96.9%
40	2	2.0%	99.0%
75	1	1.0%	100.0%
Total	98	100.0%	



Tame         Type         Definition of Time *         Call of Tele         CAL         CAL           H4         Priv         Knile to Skin -to-Drages Removed         3         32.0         72.7         107.7           H1         Priv         Knile to Skin -to-Drages Removed         3         22.3         27.3         85.4           H1         Priv         Probation 40:-Drages Removed         3         22.3         17.7         175.0           H1         Priv         Probation 40:-Drages Removed         3         22.3         162.2         175.3           H1         Priv         Probation 40:-Drages Removed         16         56.1         44.6         33.2         24.7         136.6           H1         Priv         Probation 40:-Drages Removed         8         33.2         24.7         136.6         35.9         125.2         52.4           H19         Pub         Probation 40:-Drages Removed         8         33.6         44.1         125.7         136.6         35.9         125.7         136.6         125.2         52.4         136.6         141.2         126.6         136.2         127.7         136.6         126.7         136.6         126.7         136.6         126.7         136.6 <th>Time</th> <th></th> <th>ОТ</th> <th>HER TIME ESTIMATE (OTE)</th> <th>No. of</th> <th>Average</th> <th>Time in</th> <th>Ratio 100</th>	Time		ОТ	HER TIME ESTIMATE (OTE)	No. of	Average	Time in	Ratio 100
Hat         Phy         Knile to Skin -to-Drages Removed         3         32.0         22.7         107.7           H11         Priv         File to Skin -to-Drages Removed         3         22.3         27.3         86.4           H11         Priv         PI Pepsidored to-Drages Removed         3         23.3         17.7         176.0           H1         Priv         PI Positioned to-Drages Removed         3         28.3         16.2         177.5           H10         Priv         PI Positioned to-Drages Removed         2         30.0         22.0         93.6           H11         Priv         PI Positioned to-Drages Removed         18         55.1         175.8         175.7         55.6           H10         Pub         PI Positioned to-Drages Removed         8         36.4         39.7         17.5         175.7         55.6         125.8         175.7         55.6         125.8         175.7         155.0         175.7         155.0         175.7         175.0         175.7         175.0         175.7         175.0         175.7         175.0         175.7         175.0         175.7         175.0         175.7         175.0         175.7         175.0         175.7         175.0         17	TITLE	ID	Туре	Definition of Time *	common	CRI	OTE	CRI/OTE
S0         H6         Priv         R help exposed         3         22.3         27.3         88.4           H1         Prvv         P Propage A Dropage Removed         3         22.3         27.3         88.4           H1         Prvv         P Probation d-b: Drapes Removed         3         22.3         16.2         17.5.3           H1         Prvv         P Position d-b: Drapes Removed         3         22.3         16.2         17.5.3           H1         Prvv         P Position d-b: Drapes Removed         18         55.1         41.6         12.2.5         17.5.3         12.2.5<	L.	H4	Priv	Knife to Skin -to- Dressing Applied	3	32.0	29.7	107.7
H11         Priv         PI Prepred         to. Draps Removed         3         23.3         23.3         17.7         17.0           H1         Priv         PI Positioned to. Draps Removed         4         31.5         17.7         177.0           H1         Priv         PI Positioned to. Draps Removed         3         28.3         16.2         175.3           H13         Priv         PI Positioned to. Draps Removed         18         55.1         41.6         132.5           H13         Priv         PI Positioned to. Draps Removed         8         38.4         75.2         22.8           H16         Pub         PI Positioned to. Draps Removed         8         33.4         75.2         22.8           H16         Pub         PI Positioned to. Draps Removed         8         33.6         75.2         22.8         17.6	ISC	H6	Priv	Knife to Skin -to- Drapes Removed	0			
Image         Phy         Phy         Phy additioned -to- Drages Removed         3         3         3         17.7         17.80           Into         Phy         Phy additioned -to- Drages Removed         3         2         3         17.7         17.80           Into         Phy         Phy additioned -to- Drages Removed         3	Ŭ	H11	Priv	Pt Prepped -to- Drapes Removed	3	23.3	27.3	85.4
Image         Priv         Pri Positioned 4:0: Drapss Removed         S         2.8.3         16.2         17.9.3           H13         Priv         Pri Positioned 4:0: Drapss Removed         Z         30.0         32.0         33.0           H13         Priv         Pri Positioned 4:0: Drapss Removed         E         30.0         32.0         33.0           H16         Priv         Probabined 4:0: Drapss Removed         E         30.4         132.5           H17         Pub         Probabined 4:0: Drapss Removed         E         33.9         24.7         138.6           H18         Pub         Probabined 4:0: Drapsing Applied         E         44.0         38.9         24.2         138.6           H18         Pub         Probabined 4:0: Drapsing Applied         E         43.3         34.4         122.5           Debite         Pub & Priv         Probabined 4:0: Drapsing Removed         E         33.0         24.7         13.8         88.5         161.1           H9A         Priv         Probabined 4:0: Draps Removed         E         33.0         24.1         13.2         14.3         22.4         14.3         22.4         14.3         22.4         14.3         22.4         14.3         22.4		H1	Priv	Pt Positioned -to- Drapes Removed	4	31.5	17.7	178.0
smith         mith         mith <t< td=""><td></td><td></td><td>Priv</td><td>Pt Positioned -to- Drapes Removed</td><td>3</td><td>28.3</td><td>16.2</td><td>175.3</td></t<>			Priv	Pt Positioned -to- Drapes Removed	3	28.3	16.2	175.3
Init         Phy         Phesoinced -to-Dressing Applied         16         55.1         41.6         73.2           Init         Pub         Physoinced -to-Dressing Applied         8         36.4         33.7         73.7           Init         Pub         Physoinced -to-Dressing Applied         8         33.4         72.7         73.6           Init         Pub         Physoinced -to-Dressing Applied         8         33.4         72.7         73.6           Init         Pub         Physoinced -to-Dressing Applied         8         33.9         24.7         73.6           Init         Pub         Physoinced -to-Dressing Applied         8         33.0         24.7         73.6           APHA         Priv         Physoinced -to-Dressing Applied         8         33.0         24.7         15.0           Deloitte         Pub & Priv         Physoinced -to-Trans. to Recovery Staff         16         40.0         55.0         72.7           Hit         Priv         Physoinced -to-Trans. to Recovery Staff         18         55.1         44.2         22.6           Hit         Priv         Physoinced -to-Trans. to Recovery Staff         18         33.4         85.3         77.7           Hit         Ph	*	H13	Priv	Pt Positioned -to- Drapes Removed	2	30 0	40.0	129.0
THE         PLD         PP Problement 4-b. Dressing Applied         8         364.         397.         917.           CHOP         Pub         PL Positioned 4-b. Dressing Applied         8         339.4         752.2         752.4           H18         Priv         PL Positioned 4-b. Dressing Applied         8         333.34.4         125.7           H20         Pub         PL Positioned 4-b. Dressing Applied         10         480.3         344.1         125.7           H20         Pub Pub         PL Positioned 4-b. Dressing Applied         10         480.4         482.8         825.7           Doibline         Pub B         Priv         PL Positioned 4-b. Trans. to Recovery Staff         3         28.4         82.7           H38         Priv         PL Positioned 4-b. Trans. to Recovery Staff         13         40.0         55.0         72.7           H38         PrivDay         PL Positioned 4-b. Trans. to Recovery Staff         13         40.0         55.0         72.7           H38         PrivDay         PL Positioned 4-b. Trans. to Recovery Staff         14         40.0         55.0         72.7           H38         PrivDay         PL Positioned 4-b. Trans. to Recovery Staff         14         40.2         74.6	ME	H15	Priv	Pt Positioned -to- Drapes Removed	18	55.1	41.6	132.5
OLD         HT7         Pub         Surgeon with Pt         40: Drapes Removed         8         39.4         75.2         52.2           H19         Pub         Pt Positioned to- Drapes Removed         8         43.3         24.7         136.6           H19         Pub         Pt Positioned to- Drassing Applied         16         44.0         33.9         24.7         136.6           CANS         Pub & Ptiv         Surgeon with Pt         to- Surgeon Leaves Pt         8         36.0         41.9         85.2           Deloite         Pub & Ptiv         Pt Positioned to- Trans to Recovery Staff         15         65.2         9.4         106.7           H8         Priv         Pt Positioned to- Trans to Recovery Staff         1         40.0         55.0         72.7           H13         Priv         Pt Positioned to- Trans to Recovery Staff         1         40.0         55.0         72.7           H14         Priv         Pt Positioned to- Trans to Recovery Staff         18         39.4         48.2         44.1         82.4           H14         Priv         Pt Positioned to- Trans to Recovery Staff         10         42.1         40.6         103.8         42.2           H14         Priv         Pt Positione	Ē	H16	Pub	Pt Positioned -to- Dressing Applied	8	36.4	39.7	91.7
Part Part Prive         Prive Prositioned to- Dressing Applied         8         33.9         24.7         133.8           Pub         Pt Positioned to- Dressing Applied         10         48.0         38.9         125.7           Pub         Pt Positioned to- Dressing Applied         10         48.0         38.9         125.7           Pub         Pt Positioned to- Dressing Applied         10         48.0         48.2         82.7           Delotine Pub & Ptiv         Surgeon with Pt to-Surgeon Leaves Pt         8         39.9         48.2         82.7           Delotine Pub & Ptiv         Pt Positioned to- Trans to Recovery Staff         13         22.8         38.5         16.5           HB         Ptiv         Pt Positioned to- Trans to Recovery Staff         13         20.0         14.3         224.7           HB         Ptiv         Pt Positioned to- Trans to Recovery Staff         18         55.1         44.2         124.6           HB         Ptiv         Pt Positioned to- Trans to Recovery Staff         18         36.4         44.1         22.4           HB         Ptiv         Pt Positioned to- Trans to Recovery Staff         10         42.1         14.6           HB         Ptiv         Pt Positioned to- Trans to Recovery Staff	δ L	H17	Pub	Surgeon with Pt -to- Drapes Removed	8	39.4	75.2	52.4
BIT         Pub         Pt Prostioned -to-Dressing Applied         8         43.3         34.4         125.7           APHA         Priv         Surgeon with Pt. to-Surgeon Leaves Pt         8         36.0         38.5	AT (C	H18	Priv	Pt Positioned -to- Drapes Removed	8	33.9	24.7	136.9
B         H20         PL/D         PP Prostioned to-D ressing Applied         10         48.0         48.1         28.3         128.3           CANS         Pub & Priv         Surgeon with Pt - too-Surgeon Leaves Pt         8         39.0         44.2         28.7           Deloitine         Pub & Priv         PI Prostioned too-Drapes Removec         4         32.8         38.5         17.6         161.4           H8         Priv         PI Positioned too-Trans. to Recovery Staff         3         22.0         14.3         22.43           H9B         Priv/Day         PI Positioned too-Trans. to Recovery Staff         13         40.0         55.0         17.6         163.2           H9B         Priv/Day         PI Positioned too-Trans. to Recovery Staff         18         55.1         44.2         12.4           H10         Pub         PI Positioned too-Trans. to Recovery Staff         80.4         44.1         82.4           H13         Pub         PI Positioned too-Trans. to Recovery Staff         10         42.1         14.4         66.3         46.2         13.3           H13         Pub         PI Positioned too-Trans. to Recovery Staff         10         42.1         14.4         14.4         14.4         14.4         14.4	ER	H19	Pub	Pt Positioned -to- Dressing Applied	8	43.3	34.4	125.7
APPTA         Pri/v         Surgeon with PL -to-Surgeon Leaves P1         8         30.0         44.9         85.9           CANS         Pub & Priv         PIP ostioned -to-Trans. to Recovery Staff         32.0         14.3         24.2         82.7           HBA         Priv         PIP ostioned -to-Trans. to Recovery Staff         15         65.2         59.4         109.7           HBA         Priv         PIP ostioned -to-Trans. to Recovery Staff         18         55.1         44.2         124.2           H13         Priv         PIP ostioned -to-Trans. to Recovery Staff         18         55.1         44.2         124.2         124.4         124.4         124.4         124.4         124.4         124.4         124.4         124.4         124.6         124.1         124.6         124.1         124.6         124.1         124.6         124.1         124.6         103.8         34.8         35.4         42.2         124.1         124.6         103.8         34.8         34.6         42.1         124.6         40.6         103.8         34.6         43.1         42.2         42.7         130.0         132.7         113.0         124.1         44.6         14.1         122.8         43.5         42.2         24.5         1	Р	H20	Pub	Pt Positioned -to- Dressing Applied	10	48.0	38.9	123.3
CANS         Pub & Priv         Presidence - Draps Removed         4         32.8         38.6         36.7           TOTAL         Pub & Priv         Presidence - Draps Removed         4         32.8         38.6         36.7           Total         Priv         Priv Second - Draps Removed         4         32.8         38.6         36.7           Total         Priv         Pri Positioned -to-Trans. to Recovery Staff         15         65.2         50.4         109.7           HB         Priv         Pri Positioned -to-Trans. to Recovery Staff         18         65.1         44.4         124.4           HB         Priv         Pri Positioned -to-Trans. to Recovery Staff         18         36.4         44.1         124.4           HB         Priv         Prepsitioned -to-Trans. to Recovery Staff         8         30.4         85.3         73.4           H1         Priv         Prepsitioned -to-Trans. to Recovery Staff         10         42.1         40.6         103.8           H20         Pub         Priv         Prepsitioned -to-Trans. to Recovery Staff         11         47.4         40.6         103.8           H30         Priv         Anaesthetist with P1-to-Dressing Applied         32.0         22.2         24.5			Priv	Surgeon with Pt -to- Surgeon Leaves Pt	8	36.0	41.9	85.9
H         Priv         Prival		CANS Deloitte	Pub & Priv	Pt Positioned to- Dranes Removed	8	39.9	48.2	82.7
Tampe         Priv         Priv         Privalioned-to-Trans. to Recovery Staff         5         5.203         17.93         109.7           HBA         Priv/Day         Pt Positioned-to-Trans. to Recovery Staff         3         3.20         14.3         224.4           HBB         Priv/Day         Pt Positioned-to-Trans. to Recovery Staff         3         3.20         14.3         224.4           H15         Priv         Pt Positioned-to-Trans. to Recovery Staff         18         55.1         44.2         124.4           H16         Pub         Pt Positioned-to-Trans. to Recovery Staff         8         3.64         44.1         124.4           H17         Pub         Pt Positioned-to-Trans. to Recovery Staff         8         3.70         3.27         11.30           H18         Priv         Pt Positioned-to-Trans. to Recovery Staff         10         42.1         40.6         102.8         102.7         11.30         102.7         11.30         11.32         14.4         104.6         11.02.8         10.7         10.7         10.7         10.7         10.7         10.7         11.32         10.7         10.7         11.30         10.7         10.7         10.7         10.7         10.7         10.7         10.7			Priv	Pt Positioned -to- Trans to Pocovery Staff	4	28.3	17.6	161.4
TOTAL         Table         Priv/Day         Pi Positioned to: Trans. to Recovery Staff         13         22.0         14.3         22.2.0           H13         Priv         Pt Positioned to: Trans. to Recovery Staff         1         4.00         65.0         72.7           H15         Priv         Pt Positioned to: Trans. to Recovery Staff         1         1         4.00         65.0         72.7           H16         Priv         Pt Positioned to: Trans. to Recovery Staff         8         36.4         44.1         82.4           H17         Pub         But Positioned to: Trans. to Recovery Staff         8         39.4         46.1         102.8           H19         Pub         Pub Positioned to: Trans. to Recovery Staff         11         47.4         46.1         102.8           H20         Pub         Pt Positioned to: Trans. to Recovery Staff         8         39.9         46.3         12.4         106.7           H1         Priv         Anaes. to: Drapes Removed         5         29.2         24.5         119.3           H10         Priv         Anaes. to: Drapes Removed         3         32.0         40.2         79.6           H13         Priv         Anaesthetist with Pt-to: Drapes Removed         17 <t< td=""><td></td><td>Н9А</td><td>Priv</td><td>Pt Positioned -to- Trans. to Recovery Staff</td><td>15</td><td>65.2</td><td>59.4</td><td>101.4</td></t<>		Н9А	Priv	Pt Positioned -to- Trans. to Recovery Staff	15	65.2	59.4	101.4
H13         Priv         Pt Positioned -to- Trans. to Recovery Staff         1         40.0         55.0         72.7           H15         Priv         Pt Positioned -to- Trans. to Recovery Staff         18         55.1         44.2         124.6           H16         Pub         Pt Positioned -to- Trans. to Recovery Staff         8         39.4         65.3         46.2           H17         Pub         Pub ground -to- Trans. to Recovery Staff         8         37.0         32.7         113.0           H18         Pub         Pt Positioned -to- Trans. to Recovery Staff         10         42.1         40.6         103.8           H19         Pub & Pt Positioned -to- Trans. to Recovery Staff         11         47.4         46.1         102.8           CANS         Pub & Pt Positioned -to- Trans. to Recovery Staff         32.0         40.2         179.6           H10         Priv         Anaesthetist with Pt -to- Traps Removed         5         22.2         24.5         113.3           H10         Priv         Anaesthetist with Pt -to- Traps Removed         3         32.0         40.2         79.6           H18         Priv         Anaesthetist with Pt -to- Traps Removed         17         53.0         53.1         112.2         10.6         <	Ш 2	H9B	Priv/Dav	Pt Positioned -to- Trans. to Recovery Staff	3	32.0	14.3	224.3
The priv         Priv Preparation	M	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	1	40.0	55.0	72.7
H16         Pub         Pt Positioned -to- Trans. to Recovery Staff         8         36.4         44.1         32.4           H18         Priv         Pt Positioned -to- Trans. to Recovery Staff         8         37.0         32.7         113.0           H18         Priv         Pt Positioned -to- Trans. to Recovery Staff         8         37.0         32.7         113.0           H18         Pub         Pt Positioned -to- Trans. to Recovery Staff         10         42.1         40.6         103.8           H20         Pub & Ptr Positioned -to- Trans. to Recovery Staff         11         47.4         46.1         102.8           CANS         Pub & Ptriv Stiggeon with Pt -to- Trans. to Recovery Staff         11         47.4         46.1         102.8           H4         Priv         Prep. Anaesto- Drapes Removed         5         29.2         24.5         119.3           H4         Priv         Prep. Anaesto- Drapes Removed         0         -         -         -           H10         Priv         Prep. Anaesto- Drapes Removed         10         5         28.2         10.0         34.0         88.2           H16         Pub         Prep. Anaesto- Drapes Removed         13.1         122.1         106.7         33.1 <td>S N T</td> <td>H15</td> <td>Priv</td> <td>Pt Positioned -to- Trans. to Recovery Staff</td> <td>18</td> <td>55.1</td> <td>44.2</td> <td>124.6</td>	S N T	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	18	55.1	44.2	124.6
Inf         Pub         Surgeon with Pt -to-Trans. to Recovery Staff         8         39.4         85.3         46.2           H18         Priv.         Pt Positioned -to-Trans. to Recovery Staff         10         42.1         40.6         103.8           H20         Pub         Pt Positioned -to-Trans. to Recovery Staff         11         47.4         46.1         102.8           H41         Priv         Preps.Anaesto-Draps Removed         5         29.2         24.5         119.3           H4         Priv.         Anaesthetist with Pt -to-Trans. to Recovery Staff         3         32.0         40.2         79.6           H6         Priv.         Anaesthetist with Pt -to-Trans. to Recovery Staff         3         32.0         40.2         79.6           H6         Priv.         Anaestto-Draps Removed         3         28.3         166.8         152.8         106.8           H15         Priv.         Anaestto-Draps Removed         17         55.0         43.1         122.9           H16         Priv.         Anaestto-Draps Removed         7         42.1         106.7         73.5           H17         Pub         Prep. Anaestto-Draps Removed         7         42.1         106.7         30.1	<u>0</u> 4	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	8	36.4	44.1	82.4
Bar         Priv         Pri Desitioned -to-Trans. to Recovery Staff         8         37.0         32.7         113.0           Composition         Property bit         Purpositioned -to-Trans. to Recovery Staff         10         42.1         40.6         113.8           Hand         Pub         Pt Positioned -to-Trans. to Recovery Staff         11         47.4         46.1         102.8           Hand         Priv         Use privationed -to-Trans. to Recovery Staff         13         33.0         40.2         73.4           Hand         Priv         Preps. Anaesto-Drapes Removed         5         29.2         24.5         119.3           H4         Priv         Preps. Anaesto-Drapes Removed         32.0         40.2         70.6           H4         Priv         Preps. Anaesto-Drapes Removed         32.0         34.0         83.6           H13         Priv         Preps. Anaesto-Drapes Removed         17         53.0         33.1         122.9           H16         Pub         Prep. Anaesto-Drapes Removed         13         34.0         50.5         67.4           H15         Priv         Anaesthetist with P1 -to-Drapes Removed         7         42.1         106.7         33.3.7         104.3	14 O	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	8	39.4	85.3	46.2
O         H19 H2         Pub Pub         Pt Positioned to- Trans. to Recovery Staff         10         42.1         40.6         113.8           U         Q         Pub & Priv         Surgeon with Pt -to- Trans. to Recovery Staff         11         47.4         46.1         102.8           H1         Priv         Pripe, Anaes. to- Drapes Removed         5         29.2         24.5         119.3           H4         Priv         Anaesthetis with Pt -to- Drapes Removed         3         32.0         40.2         79.6           H6         Priv         Prep. Anaes. to- Drapes Removed         3         28.3         18.6         152.3           H10         Priv         Anaesthetist with Pt -to- Drapes Removed         3         32.0         40.1         82.8           H110         Priv         Anaesthetist with Pt -to- Drapes Removed         7         42.1         106.7         33.7           H13         Priv         Anaesthetist with Pt -to- Drapes Removed         7         42.1         106.7         33.7           H117         Pub         Prep. Anaesto- Drapes Removed         7         42.1         106.7         33.7           H117         Pub         Prep. Anaesto- Drapes Removed         9         45.1         77.1 <td>ER</td> <td>H18</td> <td>Priv</td> <td>Pt Positioned -to- Trans. to Recovery Staff</td> <td>8</td> <td>37.0</td> <td>32.7</td> <td>113.0</td>	ER	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	8	37.0	32.7	113.0
CAN         Pub & Priv         Pit Positioned to: Trans. to Recovery Staft         11         47.4         46.1         1128.           MIN         Priv         Naesthetist with Pt to: Trans. to Recovery Staft         5         29.2         24.5         119.3           H1         Priv         Anaesthetist with Pt to: Drapes Removed         5         29.2         24.5         119.3           H4         Priv         Prep. Anaes. to: Drapes Removed         0         -         -           H6         Priv         Prep. Anaes. to: Drapes Removed         0         66.3         52.8         106.8           H10         Priv         Prep. Anaes. to: Drapes Removed         6         56.3         52.8         106.8           H13         Priv         Induction of Anaes. to: Drapes Removed         17         53.0         43.1         122.9           H16         Pub         Prep. Anaes. to: Dressing Applied         9         34.0         50.5         67.4           H17         Pub         Prep. Anaes. to: Dressing Applied         9         40.7         39.0         104.2           H16         Pub         Prep. Anaes. to: Dressing Applied         11         46.5         77.1         60.3           CANS         Pub & Pri	РО	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	10	42.1	40.6	103.8
CARS         Pub & Priv         Sulgeon Multi Pt-4c-Trans. to Recovery Staff         6         39.9         34.3         73.4           H4         Priv         Prep. Anaes. to: Drapes Removed         5         2.22         24.5         119.3           H4         Priv         Prep. Anaes. to: Drapes Removed         3         32.0         40.2         77.6           H8         Priv         Prep. Anaes. to: Drapes Removed         3         22.3         18.6         152.3           H10         Priv         Anaesthetist with Pt-to: Drapes Removed         6         66.3         52.8         106.8           H13         Priv         Anaesthetist with Pt-to: Drapes Removed         17         53.0         43.1         122.9           H14         Priv         Anaesthetist with Pt-to: Drapes Removed         17         53.0         43.1         122.9           H17         Pub         Prep. Anaes. to: Drapes Removed         9         35.1         33.7         104.3           H19         Pub         Prep. Anaes. to: Drapsing Applied         9         40.7         39.0         104.2           CANS         Pub & Priv         Anaesthetist with Pt-to: Draps Removed         9         33.4         74.7           RUS		H20	Pub Dub 8 Drive	Pt Positioned -to- Trans. to Recovery Staff	11	47.4	46.1	102.8
TIME         Price         Artages         Not Drapes		CANS		Surgeon with Pt -to- Trans. to Recovery Stat	8	39.9	54.3	73.4
TH         Priv         Pressing Applied         3         3         30         40.2         730           MID         Priv         Prep. Anaes. 40: Drapes Removed         0         1		H1 Lu	Priv Driv	Prep. Anaesto- Drapes Removed	5	29.2	24.5	119.3
Signal         Interp. Anaes. to Drapes Removed         3         28.3         18.6         152.3           HIG         Priv         Prep. Anaes. to Drapes Removed         3         28.3         18.6         152.3           HIG         Priv         Anaes.theits with Pt-to-Drapes Removed         2         30.0         34.0         88.2           HIG         Priv         Anaestheits with Pt-to-Drapes Removed         17         53.0         43.1         122.9           HIG         Pub         Prep. Anaes. to Drapes Removed         17         43.0         50.5         67.4           H17         Pub         Prep. Anaes.to: Drapes Removed         7         42.1         106.7         39.0           H18         Priv         Anaestheits with Pt-to-Drapes Removed         9         40.7         39.0         104.2           H20         Pub         Prep. Anaes. to-Drapes Removed         9         40.7         33.7         104.3           CANS         Pub & Priv         Prep. Anaes.to: Drapes Removed         9         40.7         33.7         104.3           Deloitic         Pub & Priv         Prep. Anaes.to: Trans.to Recovery Staff         27.5         25.5         107.8           H7         Priv/Day         Prep. A		П4 Н6	Priv	Pren Anaes, -to- Dranes Removed	3	32.0	40.2	79.0
The set of	ш	H8	Priv	Prep Anaes -to- Drapes Removed	3	28.3	18.6	152.3
Total         Priv         Anaesthetist with Pt -to- Drapes Removed         2         30.0         34.0         88.2           H13         Priv         Induction of Anaes         -to- Drapes Removed         17         53.0         43.1         122.9           H16         Pub         Prep. Anaes.         -to- Dressing Applied         9         34.0         65.5         67.4           H17         Pub         Prep. Anaes.         -to- Dressing Applied         7         42.1         106.7         39.5           H18         Priv         Anaesthetist with Pt -to- Drapes Removed         9         35.1         33.7         104.3           L20         Pub         Prep. Anaes.         -to- Dressing Applied         11         46.5         77.1         60.3           CANS         Pub & Priv         Prep. Anaes.         -to- Surg Leaves Pt         8         39.9         53.4         74.7           Deloitte         Pub & Priv         Anaesthetic Time Units as per MBS Schedule         40         69.9         103.5         67.6           H5         Priv         Prep. Anaes         -to- Trans. to Recovery Staff         1         41.0         17.1         123.92           H04         Priv         Prep. Anaes         -to-	Σ	H10	Priv	Prep. Anaesto- Drapes Removed	6	56.3	52.8	102.0
Figure         H15         Priv         Induction of Anaes         -to-Drapes Removed         17         53.0         43.1         122.9           H16         Pub         Prep. Anaes         -to-Drapes Removed         9         34.0         50.5         67.4           H17         Pub         Prep. Anaes         -to-Drapes Removed         7         42.1         106.7         39.5           H18         Priv         Anaesthetist with Pt -to-Drapes Removed         9         35.1         33.7         104.3           H20         Pub         Prep. Anaes.         -to-Dressing Applied         11         46.5         77.1         60.3           CANS         Pub & Priv         Induction of Anaes.         -to-SurgLeaves Pt         8         39.9         53.4         74.7           Deloitte         Pub & Priv         Induction of Anaes.         10.7         rans.         74.2         80.2           H3         Priv         Prep. Anaes.         -to-Trans. to Recovery Staff         2         27.5         25.5         107.8           H4         Priv         Prep. Anaes.         -to-Trans. to Recovery Staff         4         27.8         22.6         122.8           H4         Priv         Prep. Anaes.	г о	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	2	30.0	34.0	88.2
FIGS         H16         Pub         Prep. Anaesto- Drapes Removed         9         34.0         50.5         67.4           H17         Pub         Prep. Anaesto- Drapes Removed         7         42.1         106.7         39.5           H18         Priv         Anaesthetist with Pt -to- Drapes Removed         9         35.1         33.7         104.3           H19         Pub         Prep. Anaesto- Dressing Applied         11         46.5         77.1         60.3           CANS         Pub & Priv         Prep. Anaesto- Drapes Removec         3         33.7         42.0         80.2           Deloitte         Pub & Priv         Prep. Anaesto- Drapes Removec         3         33.7         42.0         80.2           MBS         Pub & Priv         Anaesthetic Time Units as per MBS Schedule         40         69.9         103.5         67.6           H7         PrivDay         Prep. Anaesto- Trans. to Recovery Staff         2         27.5         25.5         107.8           H8         Priv         Prep. Anaesto- Trans. to Recovery Staff         1         41.0         17.1         239.2           H14         Priv         Prep. Anaesto- Trans. to Recovery Staff         1         20.0         24.8	E (	H15	Priv	Induction of Anaes -to- Drapes Removed	17	53.0	43.1	122.9
Figure 1         Pub         Prep. Anaes. to: Drapes Removed         7         42.1         106.7         39.5           H18         Priv         Anaesthetist with Pt to: Drapes Removed         9         36.1         33.7         104.3           H19         Pub         Prep. Anaes. to: Dressing Applied         9         94.07         39.0         104.2           H20         Pub & Priv         Prep. Anaes. to: Drapes Removec         3         33.7         42.0         80.2           CANS         Pub & Priv         Prep. Anaes. to: Trapes Removec         3         33.7         42.0         80.2           MBS         Pub & Priv         Anaesthetic Time Units as per MBS Schedule         40         69.9         103.5         67.6           H5         Priv         Prep. Anaes. to: Trans. to Recovery Staff         1         41.0         17.1         239.2           H8         Priv         Prep. Anaes. to: Trans. to Recovery Staff         3         28.3         20.0         141.7           H9A         Priv         Prep. Anaes. to: Trans. to Recovery Staff         4         27.5         25.5         107.8           H11         Priv         Prep. Anaes. to: Trans. to Recovery Staff         4         27.8         22.6         122.8	Ξð	H16	Pub	Prep. Anaesto- Dressing Applied	9	34.0	50.5	67.4
H18         Priv         Anaesthetist with Pt to- Drapes Removed         9         35.1         33.7         104.3           H19         Pub         Prep. Anaesto- Dressing Applied         9         40.7         39.0         104.2           CANS         Pub & Priv         Prep. Anaesto- Dressing Applied         111         46.5         77.1         60.3           CANS         Pub & Priv         Induction of Anaesto- Drapes Removec         3         33.7         42.0         80.2           Deloitte         Pub & Priv         Induction of Anaesto- Trans. to Recovery Staff         2         27.5         25.5         107.8           H8         Priv         Anaesthetic Time Units as per MBS Schedule         400         69.9         103.5         67.6           H5         Priv         Prep. Anaesto- Trans. to Recovery Staff         1         41.0         17.1         239.2         20.0         141.7           H8         Priv         Prep. Anaesto- Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaesto- Trans. to Recovery Staff         4         27.8         12.6         124.8         80.7           H12         Pub         Prep. Anaesto- Trans. to Recove	S E	H17	Pub	Prep. Anaesto- Drapes Removed	7	42.1	106.7	39.5
Number         H19         Pub         Prep. Anaesto- Dressing Applied         9         40.7         39.0         104.2           H20         Pub         Prep. Anaesto- Dressing Applied         11         46.5         77.1         60.3           CANS         Pub & Priv         Induction of Anaesto- Drapes Removec         3         33.7         42.0         80.2           Deloitte         Pub & Priv         Induction of Anaesto- Trans. to Recovery Staff         2         27.5         25.5         107.8           H7         Priv/Day         Prep. Anaes         -to- Trans. to Recovery Staff         1         41.0         17.1         239.2           H8         Priv         Prep. Anaes         -to- Trans. to Recovery Staff         3         28.3         20.0         141.7           H9A         Priv         Prep. Anaes         -to- Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaes         -to- Trans. to Recovery Staff         4         27.5         34.5         72.5           H12         Pub         Prep. Anaes         -to- Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Pre	۲	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	9	35.1	33.7	104.3
H20         Pub         Prep. Anaesto- Dressing Applied         11         44.5.         7/.1         60.3           CANS         Pub & Priv         Induction of Anaesto- Drapes Removec         3         33.7         42.0         80.2           MBS         Pub & Priv         Anaesthetic Time Units as per MBS Schedule         40         69.9         103.5         67.6           H5         Priv         Prep. Anaes         -to- Trans. to Recovery Staff         2         27.5         25.5         107.8           H7         Priv/Day         Prep. Anaes         -to- Trans. to Recovery Staff         1         41.0         17.1         239.3         20.0         141.7           H9A         Priv         Prep. Anaes         -to- Trans. to Recovery Staff         3         28.3         20.0         141.7           H9B         Priv/Day         Prep. Anaes         -to- Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaes         -to- Trans. to Recovery Staff         4         25.0         34.5         77.1.4         63.7           H12         Pub         Prep. Anaes         -to- Trans. to Recovery Staff         1         20.0         24.8         80.7	A	H19	Pub	Prep. Anaesto- Dressing Applied	9	40.7	39.0	104.2
CANS         Pub & Priv         Prep. Anaes.         Or SugLeaves Pt         6         33.9         33.4         74.7           Poloitte         Pub & Priv         Induction of Anaesto- Drapes Removec         3         33.7         42.0         80.2           HS         Pub & Priv         Anaesthetic Time Units as per MBS Schedule         40         69.9         103.5         67.6           H7         Priv/Day         Prep. Anaes         -to- Trans. to Recovery Staff         1         41.0         17.1         239.2           H8         Priv         Prep. Anaes         -to- Trans. to Recovery Staff         1         65.8         69.8         94.3           H9B         Priv/Day         Prep. Anaes.         -to- Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaes.         -to- Trans. to Recovery Staff         4         25.0         34.5         77.4         63.7           H12         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         17         53.0         45.8         115.8           H15 </td <td></td> <td>H20</td> <td></td> <td>Prep. Anaesto- Dressing Applied</td> <td>11</td> <td>46.5</td> <td>//.1</td> <td>60.3</td>		H20		Prep. Anaesto- Dressing Applied	11	46.5	//.1	60.3
Pub         Priv         Anaesthetist with P1-to-Trans. to Recovery Staff         30.1         42.0         00.2           H7         Priv         Prep. Anaes         -to-Trans. to Recovery Staff         1         41.0         17.1         239.2           H8         Priv         Prep. Anaes         -to-Trans. to Recovery Staff         1         41.0         17.1         239.2           H8         Priv         Prep. Anaes         -to-Trans. to Recovery Staff         3         28.3         20.0         141.7           H9A         Priv         Prep. Anaes         -to-Trans. to Recovery Staff         4         27.8         22.6         122.8           H9B         Priv/Day         Prep. Anaes         -to-Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaes         -to-Trans. to Recovery Staff         4         25.0         34.5         77.1.4           H14         Pub         Prep. Anaes         -to-Trans. to Recovery Staff         1         20.0         24.8         80.7           H15         Priv         Induction of Anaesto-Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaes		CANS Deloitte	Pub & Priv	Induction of Anaes, -to- Dranes Removed	8	39.9	53.4 42.0	74.7
Prive         Prep. Anaes         to-Trans. to Recovery Staff         2         27.5         25.5         103.3         01.3           H5         Priv/Day         Prep. Anaes         to-Trans. to Recovery Staff         1         41.0         17.1         239.2           H8         Priv         Prep. Anaes         to-Trans. to Recovery Staff         3         28.3         20.0         141.7           H9A         Priv         Prep. Anaes         to-Trans. to Recovery Staff         16         65.8         69.8         94.3           H9B         Priv/Day         Prep. Anaes         to-Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaes         to-Trans. to Recovery Staff         4         25.0         34.5         72.5           H14         Pub         Prep. Anaes         to-Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Prep. Anaes         to-Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaes         to-Trans. to Recovery Staff         11         40.1         50.1         80.1           H20		MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	40	69.9	42.0	67.6
Priv/Day         Prep. Anaes.         to. Trans. to Recovery Staff         1         41.0         17.1         23.0.2           H7         Priv/Day         Prep. Anaes.         to. Trans. to Recovery Staff         1         41.0         17.1         23.9.2           H8         Priv         Prep. Anaes.         to. Trans. to Recovery Staff         3         28.3         20.0         141.7           H9A         Priv         Prep. Anaes.         to. Trans. to Recovery Staff         4         27.8         22.6         122.8           H9B         Priv/Day         Prep. Anaes.         to. Trans. to Recovery Staff         4         25.0         34.5         72.5           H11         Priv         Prep. Anaes.         to. Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Prep. Anaes.         to. Trans. to Recovery Staff         1         20.0         24.8         80.7           H16         Pub         Prep. Anaes.         to. Trans. to Recovery Staff         1         30.4         58.8         118.8           H17         Pub         Prep. Anaes.         to. Trans. to Recovery Staff         11         40.1         50.1         80.1           H20         P		H5	Priv	Prep Anaes -to- Trans to Recovery Staff	0	27.5	25.5	107.8
BUL         Div         Priv         Prep. Anaes         to- Trans. to Recovery Staff         3         28.3         20.0         141.7           H9A         Priv         Prep. Anaes.         -to- Trans. to Recovery Staff         16         65.8         69.8         94.3           H9B         Priv/Day         Prep. Anaes.         -to- Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaes.         -to- Trans. to Recovery Staff         4         25.0         34.5         72.5           H12         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         23         45.5         71.4         63.7           H14         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         7         42.1         118.1         35.7           H20         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         11         40.5         50.5         67.1		H7	Priv/Dav	Prep. Anaesto- Trans. to Recovery Staff	1	41.0	17.1	239.2
Number         H9A         Priv         Prep. Anaesto- Trans. to Recovery Staff         16         65.8         69.8         94.3           H9B         Priv/Day         Prep. Anaesto- Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaesto- Trans. to Recovery Staff         4         25.0         34.5         72.5           H12         Pub         Prep. Anaesto- Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Prep. Anaesto- Trans. to Recovery Staff         23         45.5         71.4         63.7           H15         Priv         Induction of Anaesto- Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaesto- Trans. to Recovery Staff         7         42.1         118.1         35.7           H19         Pub         Prep. Anaesto- Trans. to Recovery Staff         11         40.5         86.8         53.5           CANS         Pub & Prep. Anaesto- Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Priv         Induction of Anaesto- Trans.to Recovery Staff         16		H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	3	28.3	20.0	141.7
H9B         Priv/Day         Prep. Anaesto- Trans. to Recovery Staff         4         27.8         22.6         122.8           H11         Priv         Prep. Anaesto- Trans. to Recovery Staff         4         25.0         34.5         72.5           H12         Pub         Prep. Anaesto- Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Prep. Anaesto- Trans. to Recovery Staff         1         20.0         24.8         80.7           H15         Priv         Induction of Anaesto- Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaesto- Trans. to Recovery Staff         7         42.1         118.1         35.7           H17         Pub         Prep. Anaesto- Trans. to Recovery Staff         7         42.1         118.1         35.7           H19         Pub         Prep. Anaesto- Trans. to Recovery Staff         11         40.1         50.1         80.1           H20         Pub         Prep. Anaesto- Trans. to Recovery Staff         16         42.6         42.2         100.9           WAGroup         Priv         Induction of Anaes. +to- Trans. to Recovery Staff         16         58.8	Е 2	H9A	Priv	Prep. Anaesto- Trans. to Recovery Staff	16	65.8	69.8	94.3
Priv         Prep. Anaes         -to- Trans. to Recovery Staff         4         25.0         34.5         72.5           H12         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         23         45.5         71.4         63.7           H15         Priv         Induction of Anaes.         -to- Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         7         42.1         118.1         35.7           H19         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         11         40.1         50.1         80.1           H20         Pub         Prep. Anaes.         -to- Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Priv         Prep. Anaes.         -to- Trans. to Recovery Staff         16         42.2         100.9           H2         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         16         58.8         42.4         138.6           H3         Priv	Σ	H9B	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	4	27.8	22.6	122.8
H12         Pub         Prep. Anaesto- Trans. to Recovery Staff         1         20.0         24.8         80.7           H14         Pub         Prep. Anaesto- Trans. to Recovery Staff         23         45.5         71.4         63.7           H15         Priv         Induction of Anaesto- Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaesto- Trans. to Recovery Staff         8         36.4         54.4         66.9           H17         Pub         Prep. Anaesto- Trans. to Recovery Staff         11         40.1         50.1         80.1           H20         Pub         Prep. Anaesto- Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Prep. Anaesto- Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Prep. Anaesto- Trans. to Recovery Staff         16         42.6         42.2         100.9           WAGroup         Priv         Induction of Anaesto- Trans. to Recovery Staff         16         58.8         42.4         138.6           H3         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         0	ບິລ	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	4	25.0	34.5	72.5
H14         Pub         Prep. Anaesto- Trans. to Recovery Staff         23         45.5         71.4         63.7           H15         Priv         Induction of Anaesto- Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaesto- Trans. to Recovery Staff         8         36.4         54.4         66.9           H17         Pub         Prep. Anaesto- Trans. to Recovery Staff         7         42.1         118.1         35.7           H19         Pub         Prep. Anaesto- Trans. to Recovery Staff         11         40.1         50.1         80.1           H20         Pub         Prep. Anaesto- Trans. to Recovery Staff         111         46.5         86.8         53.5           CANS         Pub & Prep. Anaesto- Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Priv         Induction of Anaesto- Trans. to Recovery Staff         16         42.6         42.2         100.9           H2         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         0	μ	H12	Pub	Prep. Anaesto- Trans. to Recovery Staff	1	20.0	24.8	80.7
BY         H15         Priv         Induction of Anaes. to: Trans. to Recovery Staff         17         53.0         45.8         115.8           H16         Pub         Prep. Anaes. to: Trans. to Recovery Staff         8         36.4         54.4         66.9           H17         Pub         Prep. Anaes. to: Trans. to Recovery Staff         7         42.1         118.1         35.7           H19         Pub         Prep. Anaes. to: Trans. to Recovery Staff         11         40.1         50.1         80.1           H20         Pub         Prep. Anaes. to: Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Prep. Anaes. to: Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Priv         Induction of Anaes. to: Trans. to Recovery Staff         16         42.6         42.2         100.9           WAGroup         Priv         Induction of Anaes. to: Trans. to Recovery Staff         16         58.8         42.4         138.6           H3         Priv         Anaesthetist with Pt to: Trans.to Recovery Staff         0	ΞÔ	H14	Pub	Prep. Anaesto- Trans. to Recovery Staff	23	45.5	/1.4	63.7
Product         Prop. Analysisto- Trans. to Recovery Staff         0         36.4         34.4         66.9           H17         Pub         Prep. Anaesto- Trans. to Recovery Staff         7         42.1         118.1         35.7           H19         Pub         Prep. Anaesto- Trans. to Recovery Staff         11         40.1         50.1         80.1           H20         Pub         Prep. Anaesto- Trans. to Recovery Staff         111         46.5         86.8         53.5           CANS         Pub & Priv         Prep. Anaesto- Trans. to Recovery Staff         16         42.6         42.2         100.9           WAGroup         Priv         Induction of Anaesto- Trans. to Recovery Staff         16         42.6         42.2         100.9           H3         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         0	ES	H15	Priv	Induction of Anaesto- I rans. to Recovery Staff	17	53.0	45.8	115.8
V         Intr         Integr. Integr. Integr. Integr. Integr. Intervention         Integr.	AA	H17	Pub	Prep. Anaesto- Trans. to Recovery Staff	0	30.4 12.1	04.4 118 1	35.7
H20         Pub         Prep. Anaes         to Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Priv         Prep. Anaesto- Trans. to Recovery Staff         11         46.5         86.8         53.5           CANS         Pub & Priv         Prep. Anaesto- Trans. to Recovery Staff         16         42.6         42.2         100.9           WAGroup         Priv         Induction of Anaesto- Trans. to Recovery Staff         16         58.8         42.4         138.6           H3         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         0	A	H19	Pub	Prep. Anaesto- Trans. to Recovery Staff	11	42.1	50.1	80.1
CANSPub & PrivPrep. Anaesto- Trans. to Recovery Staff839.959.567.1WAGroupPrivInduction of Anaesto- Trans. to Recovery Staff1642.642.2100.9H2PrivAnaesthetist with Pt -to- Trans. to Recovery Staff1658.842.4138.6H3PrivAnaesthetist with Pt -to- Trans. to Recovery Staff0		H20	Pub	Prep. Anaesto- Trans. to Recovery Staff	11	46.5	86.8	53.5
WAGroupPrivInduction of Anaesto- Trans. to Recovery Staf1642.642.2100.9H2PrivAnaesthetist with Pt -to- Trans. to Recovery Staff1658.842.4138.6H3PrivAnaesthetist with Pt -to- Trans. to Recovery Staff0		CANS	Pub & Priv	Prep. Anaesto- Trans. to Recovery Staff	8	39.9	59.5	67.1
H2PrivAnaesthetist with Pt -to- Trans.to Recovery Staff1658.842.4138.6H3PrivAnaesthetist with Pt -to- Trans.to Recovery Staff000H11PrivAnaesthetist with Pt -to- Trans.to Recovery Staff000H13PrivAnaesthetist with Pt -to- Trans.to Recovery425.049.550.5H13PrivAnaesthetist with Pt -to- Trans.to Recovery Staff230.050.060.0H15PrivAnaesthetist with Pt -to- Trans.to Recovery Staff1755.971.878.0H18PrivAnaesthetist with Pt -to- Trans.to Recovery Staff834.539.088.5H19PubPt. Arrives in Theatre -to- Trans.to Recovery Staff1240.570.357.6C'mixPubAnaesthetist with Pt -to- Trans.to Recovery Staff1639.245.087.0C'mixPrivAnaesthetist with Pt -to- Trans.to Recovery Staff2249.839.9124.9C'mix Other Day & OtherAnaesthetist with Pt -to- Trans.to Recovery Staff728.717.9160.0		WAGroup	Priv	Induction of Anaesto- Trans. to Recovery Staf	16	42.6	42.2	100.9
H3PrivAnaesthetist with Pt -to- Trans.to Recovery Staff0H11PrivAnaesthetist with Pt -to- Trans. from Recovery425.049.550.5H13PrivAnaesthetist with Pt -to- Trans.to Recovery Staff230.050.060.0H15PrivAnaesthetist with Pt -to- Trans.to Recovery Staff1755.971.878.0H18PrivAnaesthetist with Pt -to- Trans.to Recovery Staff834.539.088.5H19PubPt. Arrives in Theatre -to- Trans.to Recovery Staff1240.570.357.6CmixPubAnaesthetist with Pt -to- Trans.to Recovery Staff1639.245.087.0CmixPrivAnaesthetist with Pt -to- Trans.to Recovery Staff2249.839.9124.9Cmix Other Day & OtherAnaesthetist with Pt -to- Trans.to Recovery Staff728.717.9160.0		H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	16	58.8	42.4	138.6
H11         Priv         Anaesthetist with Pt -to- Trans. from Recovery         4         25.0         49.5         50.5           H13         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         2         30.0         50.0         60.0           H15         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         17         55.9         71.8         78.0           H18         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         8         34.5         39.0         88.5           H19         Pub         Pt. Arrives in Theatre -to- Trans. to Recovery Staff         12         40.5         70.3         57.6           C'mix         Pub         Anaesthetist with Pt -to- Trans. to Recovery Staff         16         39.2         45.0         87.0           C'mix         Priv         Anaesthetist with Pt -to- Trans. to Recovery Staff         22         49.8         39.9         124.9           C'mix Other Day & Other         Anaesthetist with Pt -to- Trans. to Recovery Staff         7         28.7         17.9         160.0	ш	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	0			
H13PrivAnaesthetist with Pt -to- Trans.to Recovery Staff230.050.060.0H15PrivAnaesthetist with Pt -to- Trans.to Recovery Staff1755.971.878.0H18PrivAnaesthetist with Pt -to- Trans.to Recovery Staff834.539.088.5H19PubPt. Arrives in Theatre -to- Trans.to Recovery Staff1240.570.357.6C'mixPubAnaesthetist with Pt -to- Trans.to Recovery Staff1639.245.087.0C'mixPrivAnaesthetist with Pt -to- Trans.to Recovery Staff2249.839.9124.9C'mix Other Day & OtherAnaesthetist with Pt -to- Trans.to Recovery Staff728.717.9160.0	TR	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	4	25.0	49.5	50.5
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Image: Problem	ĭ₽		Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	8	34.5	39.0	88.5
F         Cmix         Priv         Anaesthetist with Pt         to         Trans.to         Recovery Staff         22         49.8         39.9         124.9           C'mix         Dthe         Anaesthetist with Pt         -to-         Trans.to         Recovery Staff         22         49.8         39.9         124.9           C'mix         Other         Anaesthetist with Pt         -to-         Trans.to         Recovery Staff         7         28.7         17.9         160.0	ME	C'mix	Pub	Anaesthetist with Pt -to- Trans to Recovery Staff	12	40.5	45.0	57.0 87.0
C'mix Other Day & Other Anaesthetist with Pt -to- Trans.to Recovery Staf 7 28.7 17.9 160.0	Ē	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	22	49.8	39.9	124.9
		C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staf	7	28.7	17.9	160.0

#### COMPARISON OF CARDIOLOGY / RENAL MEDICINE / INTENSIVE CARE (CRI) INTRA TIME ESTIMATES WITH OTHER ESTIMATES

\* Definition of Time - see Attachment A

Unweighted = 123.3 % Weighted (for number of items in common) = 124.5 %

Median ratio of CRI intra time estimates to OPT

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

PAT	HWAYS	FOR		PT ENT OR	ERS ANAESTHE OPERATING R	ETIC BAY OOM	START	OP TIME							END C	OP TIME	XFER TO RECOV	XFER FROM RECOV
SU	RGEON /	AND	PT ENTERS OP SUITE	Anaesth. arrives to talk to Pt	Anaesth. prepares Pt for anaes- cannula/ lines	Anaes. Commence admin/ induction of	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	RECOV
ID	TIME	TYPE		ł	Insertion	anaes	ł								1		<u> </u>	<u> </u>
Hosp4	H4OST	Priv																
Hosp6	H6OST	Priv																
Hosp11	H11OST	Priv																
Hosp1	H1OPT	Priv						-										
Hosp8	H8OPT	Priv						-										
Hosp10	H13OPT	Priv						-	1					1				
Hosp15	H15OPT	Priv						-	1									
Hosp16	H16OPT	Pub						-	i –									
Hosp17	H17OPT	Pub																
Hosp18	H18OPT	Priv						_						_				
Hosp19	H19OPT	Pub						-										
Hosp20	H20OPT	Pub																
CANS	CANSOPT	Priv Pub & Priv					-											
Deloitte	DTOPT	Pub & Priv							1	1								
Hosp8	H8OPT2	Priv							1	_								
Hosp9A	H9AOPT2	Priv							i –									
Hosp9B	H9BOPT2	Priv/Day							1									
Hosp13	H13OPT2	Priv						-										
Hosp15	H15OPT2	Priv						-	1	1								
Hosp10	H17OPT2	Pub																
Hosp18	H18OPT2	Priv																
Hosp19	H19OPT2	Pub							1	1								
Hosp20	H20OPT2	Pub							1									
CANS	CANSOPT2	Pub & Priv													_			
Hosp1	H1OAT	Priv												_				
Hosp4	H4OAT	Priv																
Hosp8	HBOAT	Priv																
Hosp10	H10OAT	Priv																
Hosp13	H13OAT	Priv												·				
Hosp15	H15OAT	Pub																
Hosp16	H16OAT	Pub																
Hosp17	H17OAT	Priv																
Hosp18	H18OAT	Pub																
Hosp19	H19OAT	Pub & Priv																
CAnS	CANSOAT	Pub & Priv																
Deloitte	DTOAT	Pub & Priv																
MBS	MBSOAT2	Pub & Priv																
Hosp5	H5OAT2	Priv																
Hosp7	H7OAT2	Priv/Day																
Hosp8	HBOAT2	Priv																
Hosp9R	H9BOAT2	Priv/Dav																
Hosp11	H110AT2	Priv																
Hosp12	H12OAT2	Pub																
Hosp14	H14OAT2	Pub																
Hosp15	H15OAT2	Priv																
Hosp16	H16OAT2	Pub																
Hosp17	H17OA12	Pub																
Hosp19	H19OAT2	Pub																
CANS	CANSOAT2	Pub & Priv																
WAGroup	WAOAT2	Priv																
Hosp2	H2THT	Priv																
Hosp3	НЗТНТ	Pub																
Hosp11	H11THT	Pub																
Hosp13	H13THT	Priv																
Hosp15	HISTHT	Priv																
Hosp19	H19THT	Day & Other																
C'mix -Pub	CMXPUTHT	Priv																
C'mix -Pte	CMXPVTHT	Priv																
C'mix-oth	CMXOTTHT	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.



## **Attachment 3 - Continued**

#### Summary Report for Technical skill etc.



## **Attachment 3 - Continued**

#### **Summary Report for Stress**



# **Attachment 4 - Links with Other Specialties**

The number of link items between Cardiology, Renal Medicine and ICU and the other Consensus Groups is set out below.

Specialty	Procedure	Consultation	Total
Specialty	Items	Items	Items
Gen. Prac. & Emergency Med.	15	0	15
Oral and Maxillo-facial Surgery	0	16	16
Obstetrics / Gynaecology	0	0	0
General Surgery	1	25	26
Cardio Thoracic Surgery	7	0	7
Neurosurgery	1	22	23
Orthopaedic surgery	0	25	25
Paediatric Surgery	1	14	15
Plastic Surgery	0	0	0
Urology	0	0	0
Vascular Surgery	0	0	0
Ophthalmology	0	0	0
ENT	2	3	5
Anaesthesia	18	25	43
Dermatology	0	6	6
Paediatric / Thoracic Medicine	8	24	32
General Medicine	15	18	33
Radiation, Oncology	0	25	25
Gastroenterology	1	24	25
Neurology	0	25	25
Haematology, Medical Oncology	1	0	1
Psychiatry	0	22	22
Total	43	25	68

#### Number of Links with Other Specialties

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

## **Radiation Oncology**

## **Summary Status Report**

November 11, 1999

Prepared For Medicare Schedule Review Board (MSRB)

Prepared By National Centre for Classification in Health (NCCH)



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

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for80 items. These comprised 54 procedure items and 26 consultation items.

Analysis of this information showed:

- There were insufficient data in NCCH's Theatre Times Database to make a meaningful assessment of bias or lack of bias in Radiation Oncology's Intra Time estimates.
- There was no significant difference between the ranks given to procedure items and consultation items nor was there a significant difference between the ranks given to link items and non-link items.
- There were no potential core items,
- The maximum range in relative rates of paymplied by the Group's rankings was 1 tc3.04. This is lower than the median observed for specialties so far examined. In terms of deviations in rates of pay, there shouldn't be any major difficulty in aligning Radiation Oncology's rankings and ratings with those of the other groups.
- There was no significant difference between the imputed relative values given to procedure items and consultation items nor was there a significant difference between the imputed relative values given to link items and non-link items.
- The correlation between the imputed relative values for Radiation Oncology and the Medicare Benefits Schedule Fee was reasonable (R 76%).

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

<sup>&</sup>lt;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 Radiation Oncology are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 29 minutes and the mean total time was 70 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1									
	Pre	Intra	Post	Total					
	Service	Service	Service	Time					
Mean	14	29	27	70					
SD	15	55	30	77					
Min	1	1	1	5					
Max	90	475	80	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

Table 2.2								
Average	Pre	Intra	Post	Total				
Times	Service	Service	Service	Time				
Procedure Items	16.6	25.5	33.0	75.1				
Consultation Items	8.0	37.7	13.0	58.7				
Total Items	13.8	29.5	26.5	69.8				

A summary breakdown is also provided in Table 2.2.

Radiation Oncology'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 Radiation Oncology's intra time estimates to the observed procedure times was based on too little data to be meaningful. Details are 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 Radiation Oncology are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 6.9 for cognitive skill, 5.5 for technical skill and 5.1 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

		Table 3.1		
	Cognitive	Technical	Stress	Total
	Skill	Skill		Intensity
Mean	6.9	5.5	5.1	17.5
SD	1.5	2.0	2.3	5.3
Min	4.0	2.0	2.0	9.0
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. They are provided for procedure items, consultation items and all items.



Figure 3.1

A summary breakdown is also provided in Table 3.2.

Average				
Intensity	Cognitive	Technical	Stress	Total
Ratings	Skill	Skill		Intensity
Procedure Items	7.0	5.5	5.4	17.9
Consultation Items	6.5	5.5	4.7	16.7
Total Items	6.9	5.5	5.1	17.5

Table 3.2

<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. There was very little difference between the ranks given to the procedure items and those given to the consultation items.

Table 4.1								
Type of Item	Number							
	Reviewed	Highest	Lowest	Average				
Procedure	54	1	80	39.94				
Consultation	26	12	66	41.65				
Total	80	1	80	40.50				

MBS items ranked by more than one Consensus Group are used in the PRS method to align items across groups. These items are known a**dink items**. The Radiation Oncology Consensus Group assessed 31 link items. These comprised all 26 of their consultation iten and 5 of the 54 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 difference between the ranks given to link items anothes given to non-link items was not significant.

Table 4.2

Type of Item	Number	Ranking			
	Reviewed	Highest	Lowest	Average	
Procedure-Link	5	2.5	76	53.70	
Consultation-Link	26	12	66	41.65	
Total Link	31	2.5	76	43.60	
Total Non-link (Procedure)	49	1	80	38.54	
Total	80	1	80	40.50	

#### 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:

- 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 Radiation Oncology is 1 to 353.

By dividing imputed relative values by time we can impute<u>relative</u> 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 0.04. This is only marginally higher than the median observed for specialties examined so får 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 also 1 to 3.04. This is lower than the median observed for specialties examiner so far.

In terms of deviations in rates of pay there shouldn't be any major difficulty in aligning Radiation Oncology'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 and between link items and non-link items in terms of imputed relative value (IRV) are set out in Table 5.1.

There was no significant difference between the imputed relative values given to the procedure items and those given to the consultation items nor was there any significant difference between imputed relative values given to the link items and those given to the non-link items.

		Table 5.1	
	Number	IR	Vs
Type of Item	Reviewed	Mean <u>+</u> SD	Low High
Procedure	54	1901 <u>+</u> 2922	57.5 20300
Consultation	26	1258 <u>+</u> 741	137.5 2750
Link	31	1257 <u>+</u> 1055	67.5 5200
Non-link	49	1968 <u>+</u> 2995	57.5 20300
Total	80	1692 <u>+</u> 2449	57.5 20300

Table 5.1

A plot of Radiation Oncology'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 F explains 76% of the variation in imputed relative values while the "Best Fit Through the Origin" explains 73%. The figure shows that MBS item 15600 is a long way from the line of best fit and should be investigated.





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 not as good as that for IR against Schedule Fee, explaining 74% of the variation as against 76%. The seven items, MBS numbers 15003, 15009, 15103, 15109, 15115, 15208 and 15214 which fall well below the line, all have "Derived Fees". The three outliers which occur above the line, MBS numbers 15348, 15518 and 15527, will need to be investigated.

Figure 5.2



## **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**



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## **Attachment 1 - Continued**

#### **Summary Report for Intra-Service Time**

	Cum. Percentage	Percentage	Freq.	Time
	13.8%	13.8%	11	1
	17.5%	3.8%	3	2
2	22.5%	5.0%	4	5
	40.0%	17.5%	14	10
1	50.0%	10.0%	8	15
	62.5%	12.5%	10	20
1	63.8%	1.3%	1	25
1	71.3%	7.5%	6	30
	76.3%	5.0%	4	40
1	86.3%	10.0%	8	45
	93.8%	7.5%	6	60
1	98.8%	5.0%	4	75
	100.0%	1.3%	1	475
		100.0%	80	Total



## **Attachment 1 - Continued**

#### Summary Report for Post-Service Time

	Time	Freq.	Percentage	Cum.	
				Percentage	
	1	1	1.3%	1.3%	
	3	17	21.3%	22.5%	
	5	4	5.0%	27.5%	
	7	2	2.5%	30.0%	25%
	10	12	15.0%	45.0%	
	20	4	5.0%	73.8%	
	35	2	2.5%	76.3%	20%
	40	1	1.3%	77.5%	
	80	18	22.5%	100.0%	150/
Total		80	100.0%		1370



#### COMPARISON OF RADIATION ONCOLOGY (RADO)Radiation Oncology Summary Report INTRA TIME ESTIMATES WITH OTHER ESTIMATES

Time		от	HER TIME ESTIMATE (OTE)	No. of items in	of Average Tir No in Minute		Ratio 100 x
	ID	Туре	Definition of Time *	common	RADO	OTE	RADO/OTE
T	H4	Priv	Knife to Skin -to- Dressing Applied	0			
so	H6	Priv	Knife to Skin -to- Drapes Removed	0			
	H11	Priv	Pt Prepped -to- Drapes Remove	0			
	H1 H8	Priv	Pt Positioned -to- Drapes Removed	0			
	H10	Priv	Pt Positioned -to- Drapes Removed	0			
*	H13	Priv	Pt Positioned -to- Drapes Removed	0			
IME	H15	Priv	Pt Positioned -to- Drapes Removed	0			
	H16	Pub	Pt Positioned -to- Dressing Applied	2	40.0	27.5	145.5
IO I	H17	Pub	Surgeon with Pt -to- Drapes Removed	0			
EAT ()	H18	Priv	Pt Positioned -to- Drapes Removed	0			
Ë	H19	Pub	Pt Positioned -to- Dressing Applied	0			
Ö		PUD Driv	Pt Positioned -to- Dressing Applied	0			
		Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	1	60.0	120.0	50.0
	Deloitte	Pub & Priv	Pt Positioned -to- Drapes Remove	0	00.0	120.0	
	H8	Priv	Pt Positioned -to- Trans. to Recovery Staff	0			
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	0			
Е 2	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	1	45.0	101.7	44.3
WI.	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	0			
N 1	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	0			
0 T	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	2	40.0	32.5	123.1
¥٥	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	0			
Ë	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	0			
Ъ.	H19	Pub	Pt Positioned -to- Trans. to Recovery Staff	0			
	H20		Pt Positioned -to- Trans. to Recovery Staff	0	60.0	105.0	49.0
			Bron Anago, to Dronge Removed	1	60.0	125.0	48.0
		Priv	Apportation with Pt. to Drossing Applied	0			
	H6	Priv	Pren Anaes -to- Dranes Removed	0			
IME	H8	Priv	Prep. Anaesto- Drapes Removed	0			
	H10	Priv	Prep. Anaesto- Drapes Removed	0			
ပ်	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	0			
E (	H15	Priv	Induction of Anaes -to- Drapes Removed	0			
ΞQ	H16	Pub	Prep. Anaesto- Dressing Applied	2	40.0	44.5	89.9
ES	H17	Pub	Prep. Anaesto- Drapes Removed	0			
AN	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	0			
A	H19	Pub	Prep. Anaesto- Dressing Applied	0			
	H20 CANS	Pub Dub & Driv	Prep. Anaesto- Dressing Applied	0	60.0	125.0	49.0
	CANS Deloitte	Pub & Priv	Induction of Anges _to_ Dranes Remove	1	60.0	125.0	48.0
	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	18	20.4	37.5	78 5
	H5	Priv	Prep. Anaes -to- Trans. to Recovery Staff	0	23.4	57.5	70.5
	H7	Priv/Dav	Prep. Anaesto- Trans. to Recovery Staff	0			
	H8	Priv	Prep. Anaes -to- Trans. to Recovery Staff	0			
Е 2	H9A	Priv	Prep. Anaesto- Trans. to Recovery Staff	0			
M	H9B	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	1	45.0	114.3	39.4
C I	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	0			
Π	H12	Pub	Prep. Anaesto- Trans. to Recovery Staff	0			
ΞŎ	H14	Pub	Prep. Anaesto- Trans. to Recovery Staff	10	29.1	70.1	41.5
ES	H15	Priv	Induction of Anaesto- Trans. to Recovery Staff	0	40.0	40 F	00.0
۸A	H17	Pub	Prep. Anaesto- Trans. to Recovery Staff	2	40.0	49.0	00.0
A	H19	Pub	Prep Anaes -to- Trans to Recovery Staff	0			
	H20	Pub	Prep. Anaesto- Trans. to Recovery Staff	0			
	CANS	Pub & Priv	Prep. Anaesto- Trans. to Recovery Staff	1	60.0	130.0	46.2
	WAGroup	Priv	Induction of Anaesto- Trans. to Recovery Sta	0			
	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	0			
ш	H3	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	0			
TR.	H11	Priv	Anaesthetist with Pt -to- Trans. from Recovery	0			
, EA	H13	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	0			
푸토	H15	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	0			
ĭ₽		PIN Pub	Anaestnetist with Pt -to- Trans.to Recovery Staff	0			
ME	C'miy	Pub	Anaesthetist with Pt _to_ Trans to Recovery Staff	1	10.0	50.0	<u> </u>
Ē	C'mix	Priv	Anaesthetist with Pt -to- Trans to Recovery Staff	1	10.0	50.0	20.0
	C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Sta	0	.0.0	0.0	_00.0

\* Definition of Time

- see Attachment A

\*\* Median ratio of RADO intra time estimates to OPT Unweighted = 97.7 %

Weighted (for number of items in common) = 145.5%

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

PAT	HWAYS	FOR	DT	PT EN	TERS ANAESTI R OPERATING	HETIC BAY ROOM	START	OP TIME							END O	PTIME	XFER TO RECOV	XFER FROM RECOV
SUF AN/	RGEON /	AND TIST	ENTERS OP SUITE	Anaesth. arrives to talk to Pt	Anaes prepares Pt for anaes- cannula/ lines	Anaes. Commence admin/ induction of	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			maerdon	anaes												
Hosp4	H4OST	Priv																
Hosp6	H6OST	Priv																
Hosp11	H11OST	Priv																
Hosp1	H1OPT	Priv						-										
Hospo Hosp10	H10OPT	Priv						-										
Hosp13	H13OPT	Priv						-	1									
Hosp15	H15OPT	Priv							1									
Hosp16	H16OPT	Pub							1									
Hosp17	H17OPT	Pub						-										
Hosp18	H18OPT	Priv						-										
Hosp20	H20OPT	Pub						-										
APHA	APHAOPT	Priv																
CANS	CANSOPT	Pub & Priv																
Deloitte	DTOPT	Pub & Priv																
Hosp8	H8OPT2	Priv						-										
Hosp9A Hosp9B	H9AOPT2	Priv/Dav						-										
Hosp13	H13OPT2	Priv						-	1									
Hosp15	H15OPT2	Priv							1	1								
Hosp16	H16OPT2	Pub																
Hosp17	H17OPT2	Pub																
Hosp18	H18OPT2	Priv						-		÷								
Hosp19 Hosp20	H20OPT2	Pub						-	1	1								
CANS	CANSOPT2	Pub & Priv																
Hosp1	H1OAT	Priv																
Hosp4	H4OAT	Priv																
Hosp6	H6OAT	Priv			-													
Hosp8	H8OAT	Priv			-													
Hosp13	H13OAT	Priv																
Hosp15	H15OAT	Pub																
Hosp16	H16OAT	Pub																
Hosp17	H17OAT	Priv																
Hosp18	H18OAT	Pub												-				
Hosp20	H20OAT	Pub & Priv			-													
CAnS	CANSOAT	Pub & Priv			-													
Deloitte	DTOAT	Pub & Priv																
MBS	MBSOAT2	Pub & Priv			-													
Hosp5	H5OAT2	Priv Driv/Dru			-													
Hosp7	H8OAT2	Priv/Day Priv			-													
Hosp9A	H9AOAT2	Priv			-													
Hosp9B	H9BOAT2	Priv/Day																
Hosp11	H11OAT2	Priv			-													
Hosp12	H12OAT2	Pub			_													
Hosp14	H140AT2	Pub																
Hosp16	H16OAT2	Pub																
Hosp17	H17OAT2	Pub			-													
Hosp19	H19OAT2	Pub																
Hosp20	H20OAT2	Pub			_													
CANS	CANSOAT2	Pub & Priv																
Hosp2	H2THT	Priv																
Hosp3	НЗТНТ	Pub																
Hosp11	H11THT	Pub																
Hosp13	H13THT	Priv																
Hosp15	H15THT	Priv																
Hosp18	H18THT	Priv																
C'mix -Pub	CMXPUTHT	Priv & Otne																
C'mix -Pte	CMXPVTHT	Priv																
C'mix-oth	СМХОТТНТ	Priv																
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	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.



# **Attachment 3 - Continued**

#### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum.
			Percentage
2	6	7.5%	7.5%
3	5	6.3%	13.8%
4	11	13.8%	27.5%
4.5	2	2.5%	30.0%
5	16	20.0%	50.0%
6	20	25.0%	75.0%
7	10	12.5%	87.5%
8	4	5.0%	92.5%
10	6	7.5%	100.0%
Total	80	100.0%	



## **Attachment 3 - Continued**

#### **Summary Report for Stress**



# **Attachment 4 - Links with Other Specialties**

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

Specialty	Procedure	Consultation	Total
Specialty	Items	Items	Items
Gen. Prac. & Emergency Med.	0	0	0
Oral and Maxillo-Facial Surgery	0	16	16
Obstetrics / Gynaecology	0	0	0
General Surgery	0	26	26
Cardio Thoracic Surgery	0	0	0
Neurosurgery	0	16	16
Orthopaedic Surgery	0	26	26
Paediatric Surgery	0	13	13
Plastic Surgery	0	0	0
Urology	0	0	0
Vascular Surgery	0	0	0
Ophthalmology	3	0	3
ENT	0	3	3
Anaesthesia	0	26	26
Dermatology	2	6	8
Paediatric / Thoracic Medicine	0	24	24
General Medicine	0	19	19
Cardiology, Renal, ICU	0	0	0
Gastroenterology	0	24	24
Neurology	0	26	26
Haematology, Medical Oncology	0	0	0
Psychiatry	0	22	22
Total	5	26	31

#### Number of Links with Other Specialties

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

# Gastroenterology

# **Summary Status Report**

October 27, 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 Gastroenterology Consensus Group.

The Gastroenterology Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 91 items. These comprised 33 procedure items and 58 consultation items.

Analysis of this information showed:

- The median ratio of Gastroenterology's intra time estimates to NCCH's Theatre Times Database observed procedure times was151.0%. This implies a strong tendency by this group to over estimate intra times,
- The group gave very similar average rankings to the procedure items and the consultation items,
- There was no bias in the ranking of either link items or potential core items,
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 4.9. In terms of deviations in rates of pay, there shouldn't be any major difficulty in aligning Gastroenterology's rankings and ratings with those of the other groups.
- Consultation and procedure items were given very similar average imputed relative<sup>1</sup> values.
- There was no significant difference between imputed relative values given to link items and non link items nor between imputed relative values given to good map items and poor/no map items.
- The two correlations between the imputed relative values for Gastroenterology and schedule fee and CPT RV were good. 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

**Proportion of Time** 

# Section 2 Summary of Time Estimates

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

The mean intra service time was 39 minutes and the mean total time was 61 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1									
	Pre	Intra	Post	Total					
	Service	Service	Service	Time					
Mean	7.6	38.8	14.7	61.1					
SD	8	22	13	33					
Min	2	0	2	10					
Max	45	75	45	140					

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.

Average Times



Figure 2.1
A summary breakdown is also provided in Table 2.2.

Table 2.2						
Average	Pre	Intra	Post	Total		
Times	Service	Service	Service	Time		
Procedure Items	15.3	34.8	26.1	76.2		
<b>Consultation Items</b>	3.2	41.1	8.2	52.5		
Total Items	7.6	38.8	14.7	61.1		

Gastroenterology'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 Gastroenterology's intra time estimates to the observed procedure times was 151.0%. 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 Gastroenterology are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 6.8 for cognitive skill, 4.9 for technical skill and 4.4 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

Table 3.1						
	Cognitiv	Technica				
	е	I	Stress	Total		
	Skill	Skill		Intensity		
Mean	6.8	4.9	4.4	16.1		
SD	2.3	1.4	1.7	4.8		
Min	0.7	0.7	0.7	2.1		
Max	9.8	8.0	8.0	24.0		

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

#### Cognitive Skill 🗖 Lecnnical Skill 🗖 Stress

A summary breakdown is also provided in Table 3.2.

Table 3.2						
Intensity	Cognitiv	Technica	Stress	Total		
Ratings	e Skill	l Skill		Intensity		
Procedure Items	4.9	4.7	4.9	14.5		
Consultation Items	7.9	4.9	4.1	16.9		
Total Items	6.8	4.9	4.4	16.1		

<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 (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 essentially the same average rank as the consultation items (Sum of ranks test not significant).

Table 4.1						
Type of Item	Number	Ranking				
	Reviewed	Highest	Lowest	Average		
Procedure	33	1	91	44.9		
Consultation	58	5	90	46.6		
Total	91	1	91	46.0		

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 Gastroentology Consensus Group assessed 78 link items. These comprised all 58 of their consultation items and 20 of the 33 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 not significantly different from those given to non-link items.

Table 4.2						
Type of Item	Number		Ranking			
	Reviewed	Highest	Lowest	Average		
Consultation	58	5	90	46.6		
Procedure-Link	20	1	86.5	44.1		
Total Link	78	1	90	46.0		
Non-Link (Procedure)	13	7	91	46.0		
Total	91	1	91	46.0		

Good maps of Gastroenterology's items to CPT were available for 12 of their 91 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 wall approad throughout the ranks

	lable	4.3			
Type of Item	Number	Ranking			
	Reviewed	Highest	Lowest	Average	
Good Map	12	3	85	51.7	
Poor/Non Map	79	1	91	45.1	
Total	91	1	91	46.0	

Table 4.0

# 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 Gastroenterology is 1 to 53.

By dividing imputed relative values by time we can impute <u>relative</u> 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 2.7. 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 4.9.

These figures are consistent with the medians observed for specialties examined so far<sup>3</sup>. Note that if one item (MBS Item 12533) is removed, the 4.9 ratio is reduced to 2.9 and the 2.7 ratio is reduced to 2.4. In terms of deviations in rates of pay, there shouldn't be any major difficulty in aligning Gastroenterology'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 did not differ significantly from those given to the procedure items. There were no significant differences between the imputed relative values given to link items and non-link items, nor between those given to good map items and poor/no map items.

	Number	IR	Vs		
Type of Item	Reviewed	Mean <u>+</u> SD	Low High		
Consultation	58	4265 <u>+</u> 2424	822.0 8557.5		
Procedure	33	4615 <u>+</u> 3002	191.5 10140.0		
Link	78	4392 <u>+</u> 2638	822.0 10140.0		
Non-link	13	4388 <u>+</u> 2740	191.5 8109.0		
Good Map	12	3873 <u>+</u> 2947	942.0 9262.5		
Poor/No Map	79	4471 <u>+</u> 2598	191.5 10140.0		
Total	91	4392 <u>+</u> 2637	191.5 10140.0		

Table 5.1

A plot of Gastroenterology's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is good  $(R^2 = 0.81)^4$  and consistent with a straight line relationship through the origin.

 $^4\,$  An R  $^2$  value of 0.81 means that the line explains 81% of the variation.



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 74% of the variation as against 81% previously. When the outlier, MBS Item 12533, is removed the fit improves to 77%.





A plot of Gastroenterology's IRVs against CPT RV is set out in Figure 5.3. The fit is good ( $R^2 = 0.82$ ) and the results are consistent with a simple proportional relationship between the scales.



A log/log plot is also provided (Figure 5.4). The fit explains 78% of the variation as against 82% previously.



### **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**



### **Attachment 1 - Continued**

### **Summary Report for Intra-Service Time**



Time (Minutes)

### **Attachment 1 - Continued**

### **Summary Report for Post-Service Time**



#### COMPARISON OF GASTROENTEROLOGY (GAST) Gastroenterology Summary Report INTRA TIME ESTIMATES WITH OTHER ESTIMATES

UD         Type         Definition of Time         COMMON         GAS1         OTE         BUS           H1         Priv         Op Start to Op End         114         395         113.3         2044           H1         Priv         Op Start to Op End         16         395         113.3         2044           H1         Priv         Op Start to Op End         16         355         123.5         215.5           H10         Priv         Surgery Start to Surgery Start to Surgery Finish         1         456         22.5         155.6           H10         Priv         Op Start to Op End         11         456         22.5         155.6           H11         Priv         Surgery Surgery Start ob Surgery Finish         17.2         22.6         165.7           H11         Priv         Surgery Start ob Surgery Start ob Surgery Finish         17.2         22.5         17.9           H11         Priv         Surgery Start ob Surgery	Time	OTH		OTHER TIME ESTIMATE (OTE)		Average Time in Minutes		Ratio 100 x GAST/OT
H1         Priv         Op Start to Op End         144         39.5         19.3         2044           H6         Priv         Op Start to Op End         8         36.9         15.0         246.4           H6         Priv         Op Start to Op End         0         7.5         24.4           H8         Priv         Surgeon Start to Dayes Removed         5         35.0         22.9         151.0         246.4           H9.4         Priv         Ingere Start to Dayes Start to Surgeor Finish         11         43.6         27.5         141.5         150.0         25.9         141.5         77.7         72.9         141.1         Priv         No         0.9         5.2.8.6         15.0         190.7         17.7         240.7         17.7         240.7         17.7         72.0         17.7         72.0         17.7         72.0         17.7         72.2         17.7         72.2         17.7         72.2         17.7         72.2         17.7         72.2         17.7         72.2         17.7         17.4         22.7         17.4         17.2         22.7         17.4         17.2         17.4         17.2         17.4         17.2         17.2         17.2         17.2         1		ID	Туре	Definition of Time	common	GAST	OTE	E
H4         Priv         Op Start to Dp End         #         #         15.0         2246.4           H6         Priv         No Start to Dp End         0         -         -         -           H8         Priv         Nugaen Start to Drapes Removed         6         35.0         23.2         151.0           H8         Priv         Nugaent. Surgery Start to Surgery Finish         11         43.6         27.5         155.6         190.7           H11         Priv         Kongeon Start to Surgeon Finish         7         38.6         7.5         178.2         216.3         178.2         216.3         178.2         216.3         178.2         216.3         178.2         216.3         178.2         178.2         178.2         178.3         178.2         178.3         178.4         216.3         178.2         178.3         178.4         216.3         133.6         33.2         77.7         37.7		H1	Priv	Op Start to Op End	14	39.5	19.3	204.4
H6         Priv         Op Start to Dop End         0         -           H8         Priv         Surgeon Start to Drapes Removed         5         35.0         22.2         151.0           H9A         Priv         Ingeon Start to Dayes Removed         5         35.0         22.9         141.1           H9A         Priv         Niggeon Start to De End         5         28.6         15.0         190.7           H11         Priv         Avigeon Start to De End         14         37.7         15.7         240.7           H13         Priv         Start to De End         14         37.7         15.7         240.7           H16         Pub         Proc Start to Proc End         17         40.2         22.1         181.6           H18         Priv         Puce Start to Proc End         17         40.2         22.1         183.6         110.98.6           H20         Pub         Positioning to Dressings Applied         8         30.6         31.1         98.6         22.2         122.5           Deloitto         Pub & Proparaton/Positioning to Dressings Applied         8         34.4         22.1         123.5           Deloitto         Pub & APin         Norgeordstarto Xter from OR		H4	Priv	Op Start to Op End	8	36.9	15.0	246.4
HB         Priv         Surgeon Start to Drapes Removed         b         3.6.0         2.3.2         15.10           HBB         Day         Day Surgeon, Start to Surgey Finish         11         43.6         7.2.5         156.6           HBB         Day         Day Surgeon, Start to Surgeon, Finish         11         43.6         7.2.5         156.6           HB         Driv         Op Start to Op End         Dressing         3.0.0         31.0         96.8           H11         Priv         Kurgeon Start to Surgeon Finish         T         7.38.6         17.8         216.7           H15         Priv         Op Start to Op End         12         31.3         33.6         33.6         33.6         10.0           H16         Priv         Op Start to Op End         17         40.2         22.1         181.6           H20         Pub         Preparation/Positioning to End Dressings Applied         8         30.6         31.1         98.6         22.2         132.5         74.4         143.7           H31         Priv         Procedure Time         9         364.4         22.1         181.6         182.2         132.2         71.6         214.5         143.2         174.2         217.4		H6	Priv	Op Start to Op End	0	05.0		454.0
Toma         This         The analysis         The anananalysis         The analysis	*		Priv Driv	Surgeon Start to Drapes Removed	5	35.0	23.2	151.0
Bits         Description         Description <thdescription< th=""> <thde< td=""><td>F</td><td>HOR</td><td>Dav</td><td>Day Surgery Surgery Start to Surgery Finish</td><td>6</td><td>43.0</td><td>27.5</td><td>138.0</td></thde<></thdescription<>	F	HOR	Dav	Day Surgery Surgery Start to Surgery Finish	6	43.0	27.5	138.0
THIL         Priv         Knife to Skin - Application of Dressing         3         200         31 0         925           H13         Priv         Surgeon Start to Surgeon Finish         7         38.6         17.5         7         240.7           H13         Priv         Surgeon Start to Surgeon Finish         17         38.6         17.5         240.7           H16         Pub         Proc Start to Proc End         12         31.3         32.1         97.4           H17         Pub         Surgical Start to Surgeol End         17         40.2         22.1         181.6           H20         Pub         Procedure Time         8         34.4         27.2         126.3           L20         Pub         Procedure Time         9         36.4         22.2         174.5           Deloitit         Pub & Priv Cop Start to Recevery Admission         14         37.7         174.4         217.5           H17         Pub Surgieal Start to Xter from OR         8         36.0         37.7         97.7           H18         Priv         Surgeon Start to Xter from OR         8         36.0         37.7         97.7           H19         Pub Surgieal Starto Xter from OR         8         36.0	PP	H10	Priv	On Start to On End	5	28.6	15.0	190.7
H13         Priv         Surgeon Finish         7         38.6         17.8         216.3           H15         Priv         Op Start to Op End         14         37.7         15.7         240.7           H16         Pub         Surgical Start to Surgical End         7         33.6         33.6         100.0           H17         Pub         Surgical Start to Surgical End         7         33.6         33.6         100.0           H18         Priv         Proc Start to Proc End         17         40.2         22.1         181.6           H20         Pub         Preparation/Postioning to End Dressings Applied         8         30.6         31.1         98.6           APHA         Priv         Procedure Time         9         36.4         22.2         174.5           Deloittie         Pub & Priv Op Start to Xer from OR         8         38.8         22.2         174.5           H13         Priv         Surgion Start to Xer from OR         8         36.9         37.7         174.5           H16         Pub         Proc Start to Ker from OR         18         40.4         26.6         151.8           H17         Pub Start to Recovery Admission         11         33.2         37.6 </td <td>Ш</td> <td>H11</td> <td>Priv</td> <td>Knife to Skin - Application of Dressing</td> <td>3</td> <td>30.0</td> <td>31.0</td> <td>96.8</td>	Ш	H11	Priv	Knife to Skin - Application of Dressing	3	30.0	31.0	96.8
H15         Priv         Op Start to Op End         14         37.7         15.7         240.7           H17         Pub         Surgical Start to Surgical End         7         33.6         33.6         100.0           H17         Pub         Surgical Start to Surgical End         7         33.6         33.6         100.0           H18         Priv         Procestart to Proc End         17         40.2         22.1         181.6           H20         Pub         Procedure Time         8         34.4         27.2         128.5           APHA         Priv         Procedure Time         9         36.4         22.3         132.5           Deloitire         Pub & Priv Op Start to Cop Finish         19         38.7         22.7         183.2           H18         Priv         Surgeon Start to Xter from OR         8         38.6         22.2         174.1           H17         Pub         Surgical Start to Xter from OR         8         36.8         37.7         17.4         217.4           H18         Priv         Surgical Start to Xter from OR         18         40.4         26.6         151.3           H19         Pub         Sourgistarito Aniesthetic Start to Aniesthetic Start to Aniesthe	≧	H13	Priv	Surgeon Start to Surgeon Finish	7	38.6	17.8	216.3
H16         Pub         Proc Start to Proc End         12         31.3         32.1         97.4           H18         Priv         Pub Surgical Start to Surgical End         17         40.2         22.1         181.6           H20         Pub         Preparation/Positioning to End Dressings         16         37.2         25.7         144.5           APHA         Privo         Preparation/Positioning to End Dressings         16         37.2         25.7         144.5           APHA         Privo         Preparation/Positioning to End Dressings         16         37.2         25.7         144.5           Deloitte         Pub & Priv Op Start to Xer from OR         5         35.0         24.8         141.1           H13         Priv         Surgical Start to Xer from OR         8         38.8         22.2         174.5           H14         Priv         Pub Constart to Xer from OR         8         36.9         37.7         97.7           H18         Priv         Pub Constart to Xer from OR         8         36.9         37.7         97.7           H20         Pub & Priv Paraation/Positioning to Admit Recovery/I         16         37.2         29.9         124.2           CANS         Pub & Priv Paraation/Positioni	Z	H15	Priv	Op Start to Op End	14	37.7	15.7	240.7
H17         Pub         Surgical Start to Surgical End         7         33.6         13.6         10.00           H19         Pub         Proc Start to Proce End         17         40.2         22.1         181.6           H19         Pub         Positioning to Dressings Applied         8         30.6         31.1         98.6           APHA         Priv         Procostart to Op Finish         19         38.7         22.2         122.5           Deloitte         Pub & Priv         Procedure Time         9         36.4         22.3         163.2           Deloitte         Pub & Strigon Start to Xfer from OR         5         35.0         24.8         141.1           Priv         Op Start to Necovery Admission         14         37.7         17.4         217.4           H18         Priv         Op Start to Necovery Admission         14         33.2         37.6         88.3           H17         Pub & Surgical Start to Xfer from OR         8         36.9         37.7         97.7           H18         Priv         Proce Start to Naresthetist Finis         18         39.2         32.9         142.9           CANS         Pub & Priv         Anaesthetic Start to Anaesthetist Start o Surgeor Start Start Stare Start St	Ĕ	H16	Pub	Proc Start to Proc End	12	31.3	32.1	97.4
Base         H18         Priv         Proc Start to Proc End         17         40.2         22.1         181.6           APH4         Pub         Preparation/Positioning to End Dressings         16         37.2         25.7         144.5           APH4         Priv         Procedure Time         8         34.4         27.2         126.3           Deloitte         Pub & Priv Op Start to Op Finish         19         38.7         22.3         135.2           H18         Priv         Surgeon Start to Xier from OR         5         35.0         24.8         141.1           H13         Priv         Surgeon Start to Xier from OR         8         38.6         22.2         174.5           H18         Priv         Proc Start to Recovery Admission         11         33.2         37.7         67.7           H18         Priv         Proc Start to Xier from OR         8         36.9         37.7         17.4         21.9         142.0           H19         Pub         Prositioning to Ximi Recovery Admission         11         33.2         37.7         17.4         21.9         142.0         11.0         13.0         13.1         14.9         14.0         14.0         14.0         14.0         14.0	RA	H17	Pub	Surgical Start to Surgical End	7	33.6	33.6	100.0
O         H19         Pub         Positioning to Dressings Applied         8         30.6         31.1         98.6           H20         Pub         Preparation/Positioning to End Dressings         16         37.2         25.7         144.5           CANS         Pub & Priv         Op Start to Op Finich         19         38.7         29.2         132.5           Delotite         Pub & Priv         Procedure Time         9         36.4         22.2         163.2           H3         Priv         Surgeon Start to Xier from OR         8         38.6         22.2         174.5           H16         Pub         Proc Start to Recovery Admission         14         37.7         97.7           H17         Pub         Surgical Start to Xier from OR         8         36.9         37.7         97.7           H19         Pub         Positioning to Ex Theatre         7         30.7         31.8         66.7           H3         Pub & Prov Costart to Xier from OR         18         39.2         32.9         119.2           M35         Pub & Priv         Anaesthetic Start to Op End         10         38.0         32.2         119.2           H4         Priv         Anaesthetic Start to Op End <td< td=""><td>E E</td><td>H18</td><td>Priv</td><td>Proc Start to Proc End</td><td>17</td><td>40.2</td><td>22.1</td><td>181.6</td></td<>	E E	H18	Priv	Proc Start to Proc End	17	40.2	22.1	181.6
H20         Price Pricedure Time         16         37.2         25.2         144.3           APHA         Priv         Procedure Time         8         34.4         27.2         126.3           Deloitite         Pub & Priv         Procedure Time         9         36.4         22.3         133.2           Deloitite         Pub & Priv         Procedure Time         9         36.4         22.3         143.5           H8         Priv         Surgeon Start to Xfer from OR         8         38.8         22.2         174.5           H113         Priv         Op Start to Recovery Admission         11         33.2         77.6         88.3           H16         Priv         Proc Start to Xfer from OR         8         36.9         37.7         97.7           H18         Priv         Proc Start to Xfer from OR         18         40.4         26.6         151.8           H20         Pub & Priv         Prositioning to Xint Namesthetis Finis         18         39.2         32.9         142.2           H3         Pub & Priv         Anaesthetic Start to Op End         10         38.0         32.8         116.0           H4         Priv         Anaesthetis Start to Surgeor Finish         11	0	H19	Pub	Positioning to Dressings Applied	8	30.6	31.1	98.6
NPTRA         Priv         Priv <t< td=""><td></td><td>H20</td><td>Pub</td><td>Preparation/Positioning to End Dressings</td><td>16</td><td>37.2</td><td>25.7</td><td>144.5</td></t<>		H20	Pub	Preparation/Positioning to End Dressings	16	37.2	25.7	144.5
Units         Delicitie         Pub & Priv         Statu to QP mission         1s         3del         22.2         1d2.2           Belicitie         Pub & Priv         Surgeon Start to Xifer from OR         5         35.0         22.8         113.2           H3         Priv         Surgeon Start to Xifer from OR         8         38.8         22.2         174.5           H15         Priv         Op Start to Recovery Admission         14         37.7         17.4         217.4           H17         Pub         Pub CS thart to Xifer from OR         8         36.9         37.7         97.7           H18         Priv         Positioning to Ex Theatre         7         30.7         31.8         39.2         22.9         124.2           CANS         Pub & Priv         Prestart to Anaesthetist Finis         18         40.4         22.6         119.2           H38         Pub & Priv         Anaesthetic Start to Op End         14         39.2         22.3         119.2           H48         Priv         Anaesthetic Start to Dige End         14         39.5         22.3         183.2           H49         Priv         Anaesthetic Start to Dige End         0         22.3         13.1           H4			Priv Dub & Driv	Procedure Time	10	34.4	21.2	120.3
Count         Dot of m         Dot of m <thdot m<="" of="" th="">         Dot of m         <th< td=""><td></td><td>Deloitte</td><td>Pub &amp; Priv</td><td>Procedure Time</td><td>19</td><td>36.4</td><td>29.2</td><td>163.2</td></th<></thdot>		Deloitte	Pub & Priv	Procedure Time	19	36.4	29.2	163.2
B         D         Digital Diamon Start to Xier from OR         6         Cost of the Start Star		H8	Priv	Surgeon Start to Xfer from OR	5	35.0	24.8	141 1
H15         Priv         Op Start to Recovery Admission         14         37.7         17.4         217.4           H16         Pub         Proc Start to Recovery Admission         11         33.2         37.6         88.3           H16         Pub         Surgical Start to Xfer from OR         8         36.9         37.7         97.7         97.7           H18         Priv         Proc Start to Xfer from OR         18         40.4         22.6.6         151.8           H17         Pub Priv         Prostioning to Ex Theatre         7         30.7         93.18         96.7           H20         Pub & Priv Anaesthetic Time         28         39.0         49.8         78.4           H4         Priv Anaesthetic Start to Op End         14         33.5         22.2         170.1           H4         Priv Anaesthetic Start to Op End         10         38.0         32.2         186.5           H6         Priv Anaesthetic Start to Op End         10         35.0         27.2         128.8           H19A         Priv Anaesthetic Start to Op End         14         33.6         33.5         113.4           H9A         Priv Anaesthetic Start to Op End         14         33.1         19.2         149.5	5	H13	Priv	Surgeon Start to Xfer from OR	8	38.8	22.2	174.5
From         Proce         Start to Recovery Admission         11         33.2         37.6         98.3           H17         Pub         Surgical Start to Xier from OR         8         36.9         37.7         97.7           H18         Priv         Droc Start to Xier from OR         18         40.4         26.6         151.8           H19         Pub         Prost Start to Xier from OR         18         40.4         26.6         151.8           H19         Pub         Privito Xier from OR         18         40.4         26.6         151.8           H17         Pub & Privito Xier from OR         14         40.4         26.6         151.8           H18         Pub & Privito Anaesthetic Start to Op End         14         39.0         49.8         77.8           H16         Privito         Anaesthetic Start to Op End         10         38.0         32.2         116.0           H6         Privito         Anaesthetic Start to Op End         0         0	IME	H15	Priv	Op Start to Recovery Admission	14	37.7	17.4	217.4
UPU         H17         Pub         Surgical Start to Xier from OR         8         36.9         37.7         97.7           H18         Priv         Proc Start to Xier from OR         18         40.4         26.6         151.8           H19         Pub         Proparation/Positioning to Admit Recovery/I         16         37.2         29.9         1124.2           CANS         Pub & Priv         Operation Start to Anaesthetist Finis         18         39.2         32.9         119.2           MBS         Pub & Priv         Anaesthetic Start to Op End         14         39.5         23.2         1170.1           H4         Priv         Anaesthetic Start to Op End         10         38.0         32.8         116.0           H6         Priv         Anaesthetic Start to Op End         0         -         -         -           H8         Priv         Patient in Theatre to Drapes Removed         5         50.0         27.2         128.8           H10         Priv         Anaesthetic Start to Op End         14         37.7         19.5         133.1         99.2           H11         Priv         Anaesthetic Start to Op End         14         37.7         19.5         193.9           H14 <td>2) T</td> <td>H16</td> <td>Pub</td> <td>Proc Start to Recovery Admission</td> <td>11</td> <td>33.2</td> <td>37.6</td> <td>88.3</td>	2) T	H16	Pub	Proc Start to Recovery Admission	11	33.2	37.6	88.3
Prog         H18         Priv         Proc Start to Xier from OR         18         40.4         26.6         151.8           Program         H19         Pub         Positioning to Xmite         7         30.7         31.8         96.7           H20         Pub & Priv         Operation/Positioning to Admit Recovery/I         16         37.2         29.9         124.2           CANS         Pub & Priv         Anaesthetic Start to Op End         18         39.2         32.2         119.2           MBS         Pub & Priv         Anaesthetic Start to Op End         10         38.0         32.2         116.0           H4         Priv         Anaesthetic Start to Op End         0         6         7         31.1         6           H6         Priv         Anaesthetic Start to Op End         0         7         32.9         33.1         99.2           H10         Priv         Anaesthetic Start to Op End         7         31.1         24.2         18.2           H13         Priv         Anaesthetic Start to Surgery End         14         33.6         39.2           H11         Priv         Anaesthetic Start to Surgery End         7         31.1         24.2         18.2           H13 </td <td>δĘ</td> <td>H17</td> <td>Pub</td> <td>Surgical Start to Xfer from OR</td> <td>8</td> <td>36.9</td> <td>37.7</td> <td>97.7</td>	δĘ	H17	Pub	Surgical Start to Xfer from OR	8	36.9	37.7	97.7
H19         Pub         Positioning to Ex Theatre         7         30.7         31.8         96.7           H20         Pub & Priv         Progration/Positioning to Admit Recovery/I         16         37.2         29.9         124.2           CANS         Pub & Priv         Anaesthetic Time         28         39.0         49.8         78.4           H19         Priv         Anaesthetic Start to Op End         14         39.5         23.2         170.1           H4         Priv         Anaesthetic Start to Op End         10         38.0         32.8         116.0           H6         Priv         Anaesthetic Start to Do End         0         -         -         -           H8         Priv         Anaesthetic Start to Surgery Finish         11         43.6         38.5         113.4           H9B         Day         Day Surgery, Anaesthetist Start to Surgery 17         32.9         33.1         99.2           H10         Priv         Anaesthetic Start to Surgery End         4         37.7         19.5         133.9           H13         Priv         Anaesthetic Start to Surgery End         7         33.1         99.2           H14         Priv         Anaesthetic Start to Surgery End         7 <td>Q AT</td> <td>H18</td> <td>Priv</td> <td>Proc Start to Xfer from OR</td> <td>18</td> <td>40.4</td> <td>26.6</td> <td>151.8</td>	Q AT	H18	Priv	Proc Start to Xfer from OR	18	40.4	26.6	151.8
BC0         H20         Proparation/Positioning to Admit Recovery/I         16         37.2         29.9         124.2           CANS         Pub & Priv         Operation Start to Anaesthetis Finis         18         39.2         32.9         119.2           MBS         Pub & Priv         Anaesthetic Start to Op End         14         39.5         22.2         170.1           H4         Priv         Anaesthetic Start to Op End         10         38.0         32.8         116.0           H5         Priv         Anaesthetic Start to Op End         0         -         -         -           H8         Priv         Patient in Theatre to Drapes Removed         5         35.0         27.2         128.8           H9A         Priv         Inpatient in A. Bay to Surgery Finish         11         43.6         38.5         113.4           H9A         Priv         Anaesthetic Start to Dp End         7         31.1         92.9         31.1         92.9           H10         Priv         Anaesthetic Start to Droc End         14         37.7         195.1         143.3         42.2         81.2           H16         Pub         Anaesthetic Start to Droc End         17         40.0         47.5         84.2	ER	H19	Pub	Positioning to Ex Theatre	7	30.7	31.8	96.7
CANS         Pub & Priv Qaration Start to Anaesthetist Finis         18         39.2         32.9         119.2           MBS         Pub & Priv         Anaesthetic Time         28         39.0         49.8         78.4           H1         Priv         Anaesthetic Start to Op End         114         39.5         23.2         170.1           H4         Priv         Anaesthetic Start to Op End         10         38.0         32.8         1166.5           H6         Priv         Anaesthetic Start to Op End         0         7         32.9         33.1         99.2         22.3         1185.5           H6         Priv         Anaesthetic Start to Op End         0         7         32.9         33.1         99.2         22.9         33.1         99.2         29.2         113.1         24.9         125.2         1149.5         149.5<	Р	H20	Pub	Preparation/Positioning to Admit Recovery/I	16	37.2	29.9	124.2
MBS         Pub & Priv         Anaesthetic Start to Op End         14         39.0         49.8         78.4           H1         Priv         Anaesthetic Start to Op End         10         38.0         32.8         116.0           H5         Priv         Anaesthetic Start to Op End         10         38.0         32.8         116.0           H6         Priv         Anaesthetic Start to Op End         0         -         -           H8         Priv         Patient in Theatre to Drapes Removed         5         35.0         27.2         128.8           H9A         Priv         Inpatient in A. Bay to Surgery Finish         11         43.6         38.5         113.4           H9B         Day Day Surgery, Anaesthetic Start to Op End         7         31.1         24.9         125.2           H13         Priv         Anaesthetic Start to Op End         14         37.7         195.193.9           H16         Pub         Anaesthetic Start to Proc End         14         37.7         195.193.9           H17         Pub         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H18         Priv         Anaesthetic Start to Desration Finish         19         38.7		CANS	Pub & Priv	Operation Start to Anaesthetist Finis	18	39.2	32.9	119.2
H1         Priv         Anaesthetic Start to Op End         14         39.5         23.2         17.0.1           H4         Priv         Anaesthetic Start to Op End         10         38.0         32.8         116.0           H5         Priv         Anaesthetic Start to Op End         0         -         -         -           H8         Priv         Patient in Theatre to Drapes Removed         5         35.0         27.2         128.8           H9A         Priv         Inpatient in A. Bay to Surgery Finish         11         43.6         38.5         113.4           H9B         Day         Day Surgery, Anaesthetic Start to Surgery F         7         32.1         29.1         125.2           H13         Priv         Anaesthetic Start to Dp End         14         34.3         42.2         81.2           H15         Priv         Anaesthetic Start to Droc End         14         34.3         42.2         81.2           H17         Pub         Anaesthetic Start to Droc Sings Applied         7         30.7         38.8         79.2           H20         Pub         Anaesthetic Start to Droc Sings Applied         7         30.7         38.8         17.2           H16         Priv         Anae		MBS	Pub & Priv	Anaesthetic Time	28	39.0	49.8	78.4
H4         Priv         Anaesthetic Start to Op End         10         38.0         32.8         116.0           WH         Priv         Anaesthetic Start to Op End         0         -		H1	Priv	Anaesthetic Start to Op End	14	39.5	23.2	170.1
Priv         Anaesthetic Start to Op End         4         37.5         22.3         108.5           HB         Priv         Anaesthetic Start to Op End         0         -         -         -         -         -         128.8           H9A         Priv         Inpatient in A. Bay to Surgery Finish         11         43.6         38.5         113.4           H9B         Day         Day Surgery. Anaesthetist Start to Surgery f         7         32.9         33.1         99.2         93.1         93.2         93.1         93.1         93.2         93.1         93.2         93.1         93.2         93.1         93.8         93.3         93.3         93.3         93.3         93.3<		H4	Priv Driv	Anaesthetic Start to Op End	10	38.0	32.8	116.0
VO         Inv         Prive Patient in Theatre to Drapes Removed         5         35.0         27.2         128.8           H9A         Priv         Inpatient in A. Bay to Surgery Finish         11         43.6         38.5         113.4           H9B         Day         Day Surgery, Anaesthetis Start to Surgery F         7         32.9         33.1         99.2           H10         Priv         Anaesthetic Start to Op End         7         31.1         24.9         125.2           H13         Priv         Anaesthetic Start to DP End         14         34.7         19.5         193.9           H16         Pub         Anaesthetic Start to Proc End         14         34.3         42.2         81.2           H17         Pub         Anaesthetic Start to Proc End         17         40.0         47.5         84.2           H18         Priv         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub         Anaesthetic Start to Cheration Finish         19         38.7         31.7         121.9           Deloitte         Pub & Priv         Anaesthetic Start to Xier for Recovery         3         30.0         37.0         81.1           H12	5	сп Не	Priv	Anaesthetic Start to On End	4	37.5	22.3	C.601
U         HBA         Priv         Instant in A. Bay to Surgery Finish         11         43.6         38.5         113.4           HBA         Priv         Instant in A. Bay to Surgery Finish         11         43.6         38.5         113.4           HBB         Day         Day Surgery, Anaesthetits Start to Op End         7         32.9         33.1         99.2           H10         Priv         Anaesthetic Start to Op End         7         31.1         24.9         125.2           H15         Priv         Anaesthetic Start to Op End         14         38.8         25.9         149.5           H16         Pub         Anaesthetic Start to Proc End         14         34.3         42.2         81.2           H17         Pub         Anaesthetic Start to Proc End         17         40.0         27.6         11.2           H18         Priv         Anaesthetic Start to Proc End         17         40.2         26.6         150.9           H18         Priv         Anaesthetic Start to Coreation Finish         19         38.7         31.7         121.9           Deloitte         Pub & Pub Anaesthetic Start to Xfer form OR         5         35.0         28.8         121.1           H11         Priv <td>-AC</td> <td>H8</td> <td>Priv</td> <td>Patient in Theatre to Drapes Removed</td> <td>5</td> <td>35.0</td> <td>27.2</td> <td>128.8</td>	-AC	H8	Priv	Patient in Theatre to Drapes Removed	5	35.0	27.2	128.8
H9B         Day         Day Surgery, Anaesthetics Start to Surgery         7         32.9         33.1         99.2           H10         Priv         Anaesthetic Start to Op End         7         31.1         24.9         125.2           H13         Priv         Anaesthetic Start to Op End         8         38.8         25.9         149.5           H15         Priv         Anaesthetic Start to Op End         14         37.7         19.5         193.9           H16         Pub         Anaesthetic Start to Op End         14         34.3         42.2         81.2           H17         Pub         Anaesthetic Start to Proc End         17         40.0         47.5         84.2           H19         Pub         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub         Anaesthetic Start to Cromo Finish         19         38.7         31.7         121.9           Deloite         Pub & Priv         Anaesthetic Start to Xfer from OR         5         35.0         28.8         121.5           H11         Priv         Anaesthetic Start to Xfer from OR         8         38.8         28.3         136.9           H13         Priv <td< td=""><td><u>с</u></td><td>H9A</td><td>Priv</td><td>Inpatient in A. Bay to Surgery Finish</td><td>11</td><td>43.6</td><td>38.5</td><td>113.4</td></td<>	<u>с</u>	H9A	Priv	Inpatient in A. Bay to Surgery Finish	11	43.6	38.5	113.4
H10         Priv         Anaesthetic Start to Op End         7         31.1         24.9         125.2           H13         Priv         Anaesthetic Start to Op End         8         38.8         25.9         149.5           H15         Priv         Anaesthetic Start to Op End         14         37.7         19.5         193.9           H16         Pub         Anaesthetic Start to Proc End         14         34.3         42.2         81.2           H17         Pub         Anaesthetic Start to Proc End         17         40.0         47.5         84.2           H18         Priv         Anaesthetic Start to Droc End         17         40.0         47.5         84.2           H20         Pub         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub Anaesthetic Time         9         36.4         28.4         128.1           Deloitte         Pub & Priv         Anaesthetic Start to Xfer for OR         5         35.0         28.8         121.5           H11         Priv         Anaesthetic Start to Xfer for Recovery         3         30.0         37.0         81.1           H12         Pub         Anaesthetic Start to Xfer form OR	IWI	H9B	Day	Day Surgery, Anaesthetist Start to Surgery	7	32.9	33.1	99.2
H13         Priv         Anaesthetic Start to Surgeon End         8         38.8         25.9         149.5           H15         Priv         Anaesthetic Start to Op End         14         37.7         19.5         193.9           H16         Pub         Anaesthetic Start to Op End         14         34.3         42.2         81.2           H17         Pub         Anaesthetic Start to Surgical End         7         40.0         47.5         84.2           H18         Priv         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub         Anaesthetic Start to Cherosings         16         37.2         33.3         111.6           CANS         Pub & Priv Anaesthetic Start to Cheration Finish         19         38.7         31.7         121.9           Deloitte         Pub & Priv         Anaesthetic Start to Xfer from OR         5         35.0         28.8         121.5           H11         Priv         Anaesthetic Start to Xfer from OR         5         35.0         38.8         90.3           H12         Pub         Anaesthetic Start to Xfer from OR         8         38.8         28.3         136.9           H12         Pub	L ⊢	H10	Priv	Anaesthetic Start to Op End	7	31.1	24.9	125.2
H15         Priv         Anaesthetic Start to Op End         14         37.7         19.5         193.9           H16         Pub         Anaesthetic Start to Proc End         14         34.3         42.2         81.2           H17         Pub         Anaesthetic Start to Proc End         17         40.0         47.5         84.2           H18         Priv         Anaesthetic Start to Proc End         17         40.2         26.6         150.9           H19         Pub         Anaesthetic Start to Droc End         17         40.2         26.6         150.9           H20         Pub         Anaesthetic Start to Droc End         17         40.2         26.6         150.9           H20         Pub         Anaesthetic Start to Droc End         17         40.2         26.6         150.9           H20         Pub         Anaesthetic Start to Operation Finish         19         38.7         31.7         121.9           Deloitte         Pub & Priv         Anaesthetic Time         9         36.4         28.4         128.1           H11         Priv         Anaesthetic Start to Xfer to Recovery         3         30.0         37.0         81.1           H12         Pub         Anaesthetic Start to	Ē	H13	Priv	Anaesthetic Start to Surgeon End	8	38.8	25.9	149.5
BY         H16         Pub         Anaesthetic Start to Proc End         14         34.3         42.2         81.2           H17         Pub         Anaesthetic Start to Surgical End         7         40.0         47.5         84.2           H18         Priv         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub & Anaesthetic Start to Operation Finish         19         38.7         31.7         121.9           Deloitte         Pub & Priv         Anaesthetic Start to Xfer fom OR         5         35.0         28.8         128.1           H11         Priv         Anaesthetic Start to Xfer to Recovery         3         30.0         37.0         81.1           H12         Pub         Anaesthetic Start to Xfer fom OR         8         38.8         28.3         136.9           H13         Priv         Anaesthetic Start to Xfer fom OR         8         38.8         28.3         136.9           H12         Pub         Anaesthetic Start to Xfer fom OR         8         38.8         28.3         136.9           H14	폰	H15	Priv	Anaesthetic Start to Op End	14	37.7	19.5	193.9
H17         Pub         Anaesthetic Start to Surgical End         7         40.0         47.5         84.2           H18         Priv         Anaesthetic Start to Proc End         17         40.2         26.6         150.9           H19         Pub         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           Deloitte         Pub & Anaesthetic Start to Operation Finish         19         38.7         31.7         121.9           Deloitte         Pub & Anaesthetic Start to Xfer from OR         5         35.0         28.8         121.5           H11         Priv         Anaesthetic Start to Xfer to Recovery         3         30.0         37.0         81.1           H12         Pub         Anaesthetic Start to Xfer to Recovery         5         35.0         38.8         90.3           H13         Priv         Anaesthetic Start to Xfer from OR         8         38.8         28.3         136.9           H14         Pub         Anaesthetic Start to Xfer from OR         14         40.2         41.3         97.5           H15         Priv         An	ES.	H16	Pub	Anaesthetic Start to Proc End	14	34.3	42.2	81.2
H18         Priv         Anaesthetic Start to Proc End         11         40.2         26.6         150.9           H19         Pub         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub         Anaesthetis Start to End Dressings         16         37.2         33.3         111.6           CANS         Pub & Priv         Anaesthetis Start to End Dressings         16         37.2         33.3         111.6           CANS         Pub & Priv         Anaesthetic Time         9         36.4         28.4         128.1           Deloitte         Pub & Anaesthetic Start to Xfer to Recovery         3         30.0         37.0         81.1           H11         Priv         Anaesthetic Start to Xfer to Recovery         5         35.0         38.8         90.3           H13         Priv         Anaesthetic Start to Xfer from OR         8         38.8         28.3         136.9           H14         Pub         Anaesthetic Start to Xfer from OR         14         40.2         41.3         97.5           H15         Priv         Anaesthetic Start to Recovery Admission         14         34.7         71.1         178.5           H16         Pub	NAI	H17	Pub	Anaesthetic Start to Surgical End	7	40.0	47.5	84.2
H19         Pub         Anaesthetic Start to Dressings Applied         7         30.7         38.8         79.2           H20         Pub         Anaesthetist Start to End Dressings         16         37.2         33.3         111.6           CANS         Pub & Priv         Anaesthetist Start to Operation Finish         19         38.7         31.7         121.9           Deloitte         Pub & Priv         Anaesthetic Time         9         36.4         28.4         128.1           H11         Priv         Anaesthetic Start to Xfer to Recovery         3         30.0         37.0         81.1           H12         Pub         Anaesthetic Start to Xfer to Recovery         5         35.0         38.8         90.3           H13         Priv         Anaesthetic Start to Xfer fom OR         8         38.8         28.3         136.9           H14         Pub         Anaesthetic Start to Recovery Admission         21         40.2         41.3         97.5           H15         Priv         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H18	A	H18	Priv	Anaesthetic Start to Proc End	1/	40.2	26.6	150.9
H20         Pub         Anaesthetics Start to End Diessings         16         37.2         33.3         111.6           CANS         Pub & Priv         Anaesthetics Start to Operation Finish         19         38.7         31.7         121.9           Deloitte         Pub & Priv         Anaesthetic Time         9         36.4         28.8         121.5           H11         Priv         Patient in Theatre to Xfer to Recovery         3         30.0         37.0         81.1           H12         Pub         Anaesthetic Start to Xfer to Recovery         5         35.0         38.8         90.3           H13         Priv         Anaesthetic Start to Xfer form OR         8         38.8         28.3         136.9           H14         Pub         Anaesthetic Start to Recovery Admission         21         40.2         41.3         97.5           H16         Pub         Anaesthetic Start to Recovery Admission         14         37.7         21.1         178.5           H16         Pub         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H17<		H19 H20	Pub	Anaesthetic Start to Dressings Applied	16	30.7	38.8	111.6
Drive         Priv         Anaesthetic Time         9         36.4         28.4         128.1           Image: Construct the elevent of the ele			Pub & Priv	Anaesthetist Start to Operation Finish	10	38.7	33.3	121.0
Image: Construct of the information of the informating the information of the information of the informa		Deloitte	Pub & Priv	Anaesthetic Time		36.4	28.4	121.3
H11         Priv         Anaesthetic Start to Xfer to Recovery         3         30.0         37.0         81.1           H12         Pub         Anaesthetic Start to Xfer to Recovery         5         35.0         38.8         90.3           H13         Priv         Anaesthetic Start to Xfer from OR         8         38.8         28.3         136.9           H14         Pub         Anaesthetic Start to Recovery Admission         21         40.2         41.3         97.5           H15         Priv         Anaesthetic Start to Recovery Admission         14         37.7         21.1         178.5           H16         Pub         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H18         Priv         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Admit Recovery/ICU         16         37.2         37.5         99.1           CANS         Pub & Priv         Anaesthetist Start to Anaesthetist Finis         19         38.7         35.8         108.1	ି	H8	Priv	Patient in Theatre to Xfer from OR	5	35.0	28.8	121.5
H12         Pub         Anaesthetic Start to Xfer to Recovery         5         35.0         38.8         90.3           H13         Priv         Anaesthetic Start to Xfer from OR         8         38.8         28.3         136.9           H14         Pub         Anaesthetic Start to Recovery Admission         21         40.2         41.3         97.5           H15         Priv         Anaesthetic Start to Recovery Admission         14         37.7         21.1         178.5           H16         Pub         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H18         Priv         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H2         Priv         Anaesthetis Start to Admit Recovery/ICU         16         37.7         32.8         114.9           H3	Ë	H11	Priv	Anaesthetic Start to Xfer to Recovery	3	30.0	37.0	81.1
H13         Priv         Anaesthetic Start to Xfer from OR         8         38.8         28.3         136.9           H14         Pub         Anaesthetic Start to Recovery Admission         21         40.2         41.3         97.5           H15         Priv         Anaesthetic Start to Recovery Admission         14         37.7         21.1         178.5           H16         Pub         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H18         Priv         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Admit Recovery/ICU         16         37.2         37.5         99.1           CANS         Pub & Priv         Anaesthetist Start to Anaesthetist Finis         19         38.7         35.8         108.1           H2         Priv         Total Time in Theatre         16         37.7         32.8         114.9           H3	<b>o</b>	H12	Pub	Anaesthetic Start to Xfer to Recovery	5	35.0	38.8	90.3
H14         Pub         Anaesthetic Start to Recovery Admission         21         40.2         41.3         97.5           H15         Priv         Anaesthetic Start to Recovery Admission         14         37.7         21.1         178.5           H16         Pub         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H18         Priv         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Ex Theatre         7         30.7         41.4         74.3           H20         Pub         Anaesthetist Start to Admit Recovery/ICU         16         37.2         37.5         99.1           CANS         Pub & Priv         Anaesthetist Start to Anaesthetist Finis         19         38.7         35.8         108.1           H2         Priv         Total Time in Theatre         16         37.7         32.8         114.9           H3	2 (	H13	Priv	Anaesthetic Start to Xfer from OR	8	38.8	28.3	136.9
FUND         H15         Priv         Anaesthetic Start to Recovery Admission         14         37.7         21.1         178.5           H16         Pub         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H18         Priv         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Ex Theatre         7         30.7         41.4         74.3           H20         Pub         Anaesthetis Start to Admit Recovery/ICU         16         37.2         37.5         99.1           CANS         Pub & Priv         Anaesthetist Start to Admit Recovery/ICU         16         37.7         32.8         114.9           H3         Priv         Total Time in Theatre         16         37.7         32.8         114.9           H3         Priv         Total Time in Theatre         7         33.6         12.1         277.7           H4         Priv         Total Time in Theatre         7         30.0         52.7         57.0           H11         Pr	Β	H14	Pub	Anaesthetic Start to Recovery Admission	21	40.2	41.3	97.5
Pub         Anaesthetic Start to Recovery Admission         14         34.3         46.7         73.4           H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H18         Priv         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Ex Theatre         7         30.7         41.4         74.3           H2         Pub         Anaesthetis Start to Admit Recovery/ICU         16         37.2         37.5         99.1           CANS         Pub & Priv         Anaesthetist Start to Admit Recovery/ICU         16         37.7         32.8         114.9           H2         Priv         Total Time in Theatre         16         37.7         32.8         114.9           H3         Priv         Total Time in Theatre         43.3.8         15.2         222.2           H7         Day         Total Time in Theatre         7         30.0         52.7         57.0           H11         Priv         Dress, scrub etc. to Xfer to Recovery         3         30.0         52.7         57.0           H15         Priv         Theatre Reception to Recovery Admission	F	H15	Priv	Anaesthetic Start to Recovery Admission	14	37.7	21.1	178.5
H17         Pub         Anaesthetic Start to Xfer from OR         7         40.0         54.1         74.0           H18         Priv         Anaesthetic Start to Xfer from OR         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Ex Theatre         7         30.7         41.4         74.3           H2         Pub         Anaesthetis Start to Admit Recovery/ICU         16         37.2         37.5         99.1           H2         Priv         Anaesthetis Start to Admit Recovery/ICU         16         37.7         32.8         114.9           H3         Priv         Anaesthetist Start to Anaesthetist Finis         19         38.7         35.8         108.1           H2         Priv         Total Time in Theatre         16         37.7         32.8         114.9           H3         Priv         Total Time in Theatre         7         33.6         12.1         277.7           H4         Priv         Total Time in Theatre         7         30.0         52.7         57.0           H1         Priv         Dress, scrub etc. to Xfer to Recovery         3         30.0         52.7         57.0           H15         Priv         Ineatre Recepti	0 E	H16	Pub	Anaesthetic Start to Recovery Admission	14	34.3	46.7	73.4
H18         Priv         Anaesthetic Start to Xier from OK         17         40.2         31.6         127.2           H19         Pub         Anaesthetic Start to Ex Theatre         7         30.7         41.4         74.3           H20         Pub         Anaesthetic Start to Admit Recovery/ICU         16         37.2         37.5         99.1           CANS         Pub & Priv         Anaesthetist Start to Admit Recovery/ICU         16         37.2         37.5         99.1           H3         Priv         Anaesthetist Start to Anaesthetist Finis         19         38.7         35.8         108.1           H3         Priv         Total Time in Theatre         16         37.7         32.8         114.9           H3         Priv         Total Time in Theatre         7         33.6         12.1         277.7           H1         Priv         Total Time in Theatre         7         33.6         12.1         277.7           H11         Priv         Dress, scrub etc. to Xfer to Recovery         3         30.0         52.7         57.0           H15         Priv         Theatre Reception to Recovery Admission         14         37.7         26.7         141.5           H19         Pub	뽀	H17	Pub	Anaesthetic Start to Xfer from OR	/	40.0	54.1	/4.0
High         Pub         Anaesthetic Start to LX meate         7         30.7         41.4         74.5           H20         Pub         Anaesthetist Start to Admit Recovery/ICU         16         37.2         37.5         99.1           CANS         Pub & Priv         Anaesthetist Start to Admit Recovery/ICU         16         37.2         37.5         99.1           H2         Priv         Anaesthetist Start to Anaesthetist Finis         19         38.7         35.8         108.1           H3         Priv         Total Time in Theatre         16         37.7         32.8         114.9           H3         Priv         Total Time in Theatre         4         33.8         15.2         222.2           H7         Day         Total Time in Theatre         7         33.6         12.1         277.7           H1         Priv         Dress, scrub etc. to Xfer to Recovery         3         30.0         52.7         57.0           H15         Priv         Theatre Reception to Recovery Admission         14         37.7         26.7         141.5           H19         Pub         In Op Suite to Ex Theatre         7         30.7         57.8         53.2           C'mix Put Pub         Casemix Public Theat	ST	H18 H10	Priv	Anaesthetic Start to Xier from OR		40.2	31.6	74.2
High         High <th< td=""><td>AE</td><td>H20</td><td>Pub</td><td>Anaesthetist Start to Admit Recovery/ICLL</td><td>16</td><td>30.7</td><td>37.5</td><td>00.1</td></th<>	AE	H20	Pub	Anaesthetist Start to Admit Recovery/ICLL	16	30.7	37.5	00.1
H2         Priv         Total Time in Theatre         16         37.7         32.8         114.9           H3         Priv         Total Time in Theatre         4         33.8         15.2         222.2           H7         Day         Total Time in Theatre         4         33.6         12.1         277.7           H1         Priv         Dress, scrub etc. to Xfer to Recovery         3         30.0         52.7         57.0           H15         Priv         Theatre Reception to Recovery Admission         14         37.7         26.7         141.5           H19         Pub         In Op Suite to Ex Theatre         7         30.7         57.8         53.2           C'mix Put Pub         Casemix Public Theatre Time         23         36.7         26.3         140.0           C'mix Priv Priv         Casemix Private Theatre Time         23         36.7         26.3         140.0           C'mix Oth Day & Othe Casemix Other Theatre Time         12         41.7         21.5         194.3           WA         Priv         WA Group Total Time in Theatre         23         37.7         28.0         134.6	AN	CANS	Pub & Priv	Anaesthetist Start to Anaesthetist Finis	19	38.7	35.8	108.1
H3         Priv         Total Time in Theatre         4         33.8         15.2         222.2           H7         Day         Total Time in Theatre         7         33.6         12.1         277.7           H7         Day         Total Time in Theatre         7         33.6         12.1         277.7           H1         Priv         Dress, scrub etc. to Xfer to Recovery         3         30.0         52.7         57.0           H15         Priv         Theatre Reception to Recovery Admission         14         37.7         26.7         141.5           H19         Pub         In Op Suite to Ex Theatre         7         30.7         57.8         53.2           C'mix Put Pub         Casemix Public Theatre Time         23         36.7         26.3         140.0           C'mix Priv Priv         Casemix Public Theatre Time         26         38.6         24.7         156.0           C'mix Oth Day & Othe Casemix Other Theatre Time         12         41.7         21.5         194.3           WA         Priv         WA Group Total Time in Theatre         23         37.7         28.0         134.6	(	H2	Priv	Total Time in Theatre	16	37.7	32.8	114.9
H7         Day         Total Time in Theatre         7         33.6         12.1         277.7           H1         Priv         Dress, scrub etc. to Xfer to Recovery         3         30.0         52.7         57.0           H15         Priv         Theatre Reception to Recovery Admission         14         37.7         26.7         141.5           H19         Pub         In Op Suite to Ex Theatre         7         30.7         57.8         53.2           C'mix Put Pub         Casemix Public Theatre Time         23         36.7         26.3         140.0           C'mix Priv Priv         Casemix Public Theatre Time         26         38.6         24.7         156.0           C'mix Oth Day & Othe Casemix Other Theatre Time         12         41.7         21.5         194.3           WA         Priv         WA Group Total Time in Theatre         23         37.7         28.0         134.6	보	H3	Priv	Total Time in Theatre	4	33.8	15.2	222.2
H11         Priv         Dress, scrub etc. to Xfer to Recovery         3         30.0         52.7         57.0           H15         Priv         Theatre Reception to Recovery Admission         14         37.7         26.7         141.5           H19         Pub         In Op Suite to Ex Theatre         7         30.7         57.8         53.2           C'mix Put Pub         Casemix Public Theatre Time         23         36.7         26.3         140.0           C'mix Priv Priv         Casemix Private Theatre Time         26         38.6         24.7         156.0           C'mix Oth Day & Othe Casemix Other Theatre Time         12         41.7         21.5         194.3           WA         Priv         WA Group Total Time in Theatre         23         37.7         28.0         134.6	E	H7	Day	Total Time in Theatre	7	33.6	12.1	277.7
H15         Priv         Theatre Reception to Recovery Admission         14         37.7         26.7         141.5           H19         Pub         In Op Suite to Ex Theatre         7         30.7         57.8         53.2           C'mix Put Pub         Casemix Public Theatre Time         23         36.7         26.3         140.0           C'mix Priv Priv         Casemix Private Theatre Time         26         38.6         24.7         156.0           C'mix Oth Day & Othe Casemix Other Theatre Time         12         41.7         21.5         194.3           WA         Priv         WA Group Total Time in Theatre         23         37.7         28.0         134.6	IRE	H11	Priv	Dress, scrub etc. to Xfer to Recovery	3	30.0	52.7	57.0
H19PubIn Op Suite to Ex Theatre730.757.853.2C'mix Put PubCasemix Public Theatre Time2336.726.3140.0C'mix Priv PrivCasemix Private Theatre Time2638.624.7156.0C'mix Oth Day & Othe Casemix Other Theatre Time1241.721.5194.3WAPrivWA Group Total Time in Theatre2337.728.0134.6	LA I	H15	Priv	Theatre Reception to Recovery Admission	14	37.7	26.7	141.5
Cimix Put PubCasemix Public Theatre Time2336.726.3140.0Cimix PrivCasemix Private Theatre Time2638.624.7156.0Cimix Oth Day & Othe Casemix Other Theatre Time1241.721.5194.3WAPrivWA Group Total Time in Theatre2337.728.0134.6	폰	H19	Pub	In Op Suite to Ex Theatre	7	30.7	57.8	53.2
Umix PriverivCasemix Private Theatre Time2638.624.7156.0Cimix Oth Day & OthCasemix Other Theatre Time1241.721.5194.3WAPrivWA Group Total Time in Theatre2337.728.0134.6	z	C'mix Put	Pub	Casemix Public Theatre Time	23	36.7	26.3	140.0
F WA Priv WA Group Total Time in Theatre 23 37 7 28 0 134 6	Щ	C'mix Priv		Casemix Private Theatre Time	26	38.6	24.7	156.0
	l <b>≥</b>		Day & Uthe Priv	WA Group Total Time in Theatre	12	41.7	21.5 28.0	134.3

\* Median ratio of GAST intra time estimates to

OPT

(excluding H4, H6, H9A, H9B and H11)

Unweighted = 151.0 %

### **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.



### **Attachment 3 - Continued**

### Summary Report for Technical skill etc.



### **Attachment 3 - Continued**

### **Summary Report for Stress**



## **Attachment 4 - Links with Other Specialties**

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

		Consultatio	
Specialty	Procedure	n	Total
	Items	Items	Items
Gen. Prac. & Emergency Med	2	0	2
Oral and Maxillo-facial Surger	0	16	16
Obstetrics / Gynaecology	0	0	0
General Surgery	20	58	78
Cardio Thoracic Surgery	0	0	0
Neurosurgery	0	22	22
Orthopaedic surgery	0	58	58
Paediatric Surgery	0	15	15
Plastic Surgery	0	0	0
Urology	0	0	0
Vascular Surgery	0	0	0
Ophthalmology	0	0	0
ENT	0	3	3
Anaesthesia	0	58	58
Dermatology	0	6	6
Peadiatric & Thoracic Medicir	0	58	58
General Medicine	5	48	53
Cardiology, Renal, ICU	1	0	1
Radiation, Oncology	0	58	58
Neurology	0	58	58
Haematology, Medical Oncold	0	0	0
Psychiatry	0	53	53
Total	20	58	78

#### Number of Links with Other Specialties

# Glossary

Consultation Iter	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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

# Neurology

## **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 Neurology Consensus Group.

The Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 84 items. These comprised 19 procedure items and 65 consultation items.

Analysis of this information showed:

- The median ratio of Neurology's intra time estimates to NCCH's Theatre Times Database observed procedure times was 49.3%.

This

is low because technicians assist in 9 (47%) of the 19 items.

#### These items

have all been given zero intra times

- The Group gave very much higher ranks to consultation items than

to

link

procedure items, significantly higher ranks to link items than to non-

items and significantly lower ranks to good map items than 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 2.0. This is lower than the median observed for specialties so far examined. It could be difficult to align

Neurology's

rankings and ratings with those of the other groups, particularly Psychiatry.

- Consultation items were given very much greater imputed relative values<sup>1</sup>

than procedure items (p < 0.001).

- Link items were given significantly higher imputed relative values than

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 Neurology are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 31 minutes and the mean total time was 54 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1								
	Pre	Pre Intra Post Total						
	Service	Service	Service	Time				
Mean	7	31	16	54				
SD	8	24	10	35				
Min	1	0	3	6				
Max	28	75	40	133				

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

Average	Pre	Intra	Post	Total					
Times	Service	Service	Service	Time					
Procedure Items	3.8	9.3	11.6	24.7					
<b>Consultation Items</b>	8.2	37.7	16.8	62.7					
Total Items	7.2	31.3	15.6	54.1					

A summary breakdown is also provided in Table 2.2.

Neurology'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 Neurology's intra time estimates to the observed procedure times was 49.3%. The reason that this is low is that technicians assist in 9 (47%) of the 19 items. These items have all been given zero intra times. Details are provided in Attachment 2.

Table 2.2

# 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 Neurology are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 7.8 for cognitive skill, 7.0 for technical skill and 7.2 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

	Cognitiv	Technica		
	е	I	Stress	Total
	Skill	Skill		Intensity
Mean	7.8	7.0	7.2	22.0
SD	1.5	1.3	1.8	4.2
Min	3.0	3.0	2.0	9.0
Max	9.0	8.0	8.0	25.0

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.

Average				
Intensity	Cognitive	Technica	Stress	Total
	<u> </u>			
Ratings	Skill	l Skill		Intensity
Ratings Procedure Items	<b>Skill</b> 5.8	<b>I Skill</b> 5.5	4.6	Intensity 15.9
Ratings Procedure Items Consultation Items	5.8 8.4	5.5 7.4	4.6 8.0	Intensity 15.9 23.8

Table 3.2

<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 (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 consultation items were given very much higher ranks than the procedure items (sum of ranks test, p < 0.001).

Table 4.1								
Type of Item	Number	Ranking						
	Reviewed	Highest	Lowest	Average				
Procedure	19	33	84	66.29				
Consultation	65	1	77	35.55				
Total	84	1	84	42.50				

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**. The Neurology Consensus Group assessed 73 link items. These comprised all 65 of their consultation items and 8 of the 19 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 significantly higher than those given to non-link items (sum of ranks test, p < 0.05).

Table 4.2								
Type of Item	Number		Ranking					
	Reviewed	Highest	Lowest	Average				
Consultation-Link	65	1	77	35.55				
Procedure-Link	8	65	84	76.94				
Total Link	73	1	84	40.08				
Non-link (Procedure)	11	33	80.5	58.55				
Total	84	1	84	42.50				

Good maps of Neurology's items to CPT were available for 3 of their 84 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 significantly lower than poor/no-map items (p < 0.05).

Table 4.3								
Type of Item	Number	Ranking						
	Reviewed	Highest	Lowest	Average				
Good Map	3	65	80.5	73.8				
Poor/Non Map	81	1	84	41.3				
Total	84	1	84	42.5				

NCCH - Professional Relativities Study

## 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 Neurology is 1 to 44.

By dividing imputed relative values by time we can impute <u>relative</u> 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 for Neurology is 1 to 2.0. This remains unchanged when both variations in intensity and variations in the composition of times (pre: intra: post) are assessed.

These ranges in relative rates of pay are lower 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 Neurology's rankings and ratings with those of the other groups, particularly Psychiatry.

<sup>&</sup>lt;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 very much greater imputed relative values than the procedure items (t tests, p < 0.001), the link items were given significantly higher imputed relative values than the non-link items (t tests, p < 0.05) and the good map items were given significantly lower imputed relative values than the poor/no-map items (t tests, p < 0.05).

	Number	IRVs					
Type of Item	Reviewed	Mean <u>+</u> SD	Low	High			
Consultation	65	1969 <u>+</u> 1126	280	4256			
Procedure	19	620 <u>+</u> 539	96	1755			
Link	73	1781 <u>+</u> 1192	96	4256			
Non-link	11	886 <u>+</u> 556	144	1755			
Good Map	3	350 <u>+</u> 234	144	605			
Poor/No Map	81	1713 <u>+</u> 1160	96	4256			
Total	84	1664 <u>+</u> 1167	96	4256			

Table	5.1
-------	-----

A plot of Neurology's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is poor, explaining only 21% of the variation.



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 extremely poor.



A plot of Neurology's IRVs against CPT RV is set out in Figure 5.3. The fit is good ( $R^2 = 94\%$ ), but there are only 3 items involved.



A log/log plot is also provided (Figure 5.4). The fit improves marginally from  $R^2 = 94\%$  to  $R^2 = 95\%$ .



### **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**



100%

90% 80%

70%

60% 50%

40%

30% 20%

10% 0%

60

75

### **Attachment 1 - Continued**

#### **Summary Report for Intra-Service Time**

Time	Freq.	Percentage	Cum.											
			Percentage											
0	9	10.7%	10.7%											
5	6	7.1%	17.9%											
7	1	1.2%	19.0%	16% 7										
10	7	8.3%	27.4%											
15	6	7.1%	34.5%	14% -						-				
20	12	14.3%	48.8%										1	
25	1	1.2%	50.0%	100/										_
30	11	13.1%	63.1%	12% -										
35	1	1.2%	64.3%											
45	10	11.9%	76.2%	10% -	-					-				
60	10	11.9%	88.1%								/	ſ		
75	10	11.9%	100.0%	8% -				-						
Total	84	100.0%												
				6%						1				
Number of miss	sing values :	= 0		0/0										
									T I					
				4% -										
				2% -		1		-	4 -	-				-
					_									
				0% -										
				070	0	5	7	10	15	20	25	30	35	45
										Time (I	Minutes)			

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### **Attachment 1 - Continued**

#### Summary Report for Post-Service Time

Time	Freq.	Percentage	Cum. Percentage		
3	5	6.0%	6.0%		
5	13	15.5%	21.4%		
7	3	3.6%	25.0%		
8	5	6.0%	31.0%	18% -	
10	9	10.7%	41.7%		
15	10	11.9%	59.5%	16% -	
20	12	14.3%	73.8%	14% -	
25	10	11.9%	85.7%		
30	10	11.9%	97.6%	12% -	
40	2	2.4%	100.0%	10% -	
Total	84	100.0%			
				8% -	

Number of missing values = 0



#### COMPARISON OF NEUROLOGY (NEUR) INTRA TIME ESTIMATES WITH OTHER ESTIMATES

Time		отн	ER TIME ESTIMATE (OTE)	No. of Average Time in Minutes		Ratio 100 x	
	ID	Туре	Definition of Time	common	NEUR	ΟΤΕ	E
	H1	Priv	Op Start to Op End	0			
	H4	Priv	Op Start to Op End	0			
	H6	Priv	Op Start to Op End	0	7	10 5	E1 0E
*	по Над	Priv	Surgeon Start to Drapes Removed	1	7	13.5	51.85
(F	H9B	Dav	Day Surgery, Surgery Start to Surgery Finish	1	5	5.43	92.08
Ö)	H10	Priv	Op Start to Op End	0			
Ψ	H11	Priv	Knife to Skin - Application of Dressing	0			
L I	H13	Priv	Surgeon Start to Surgeon Finish	0			
NO	H15	Priv	Op Start to Op End	0			
Ĩ	H16	Pub	Proc Start to Proc End	0			
ER/	H17	Pub	Surgical Start to Surgical End	0	7	45	40.07
PE	H18	Priv	Proc Start to Proc End	1	/	15	46.67
Ŭ	H20	Pub	Preparation/Positioning to End Dressings	0			
	APHA	Priv	Procedure Time	0			
	CANS	Pub & Priv	Op Start to Op Finish	0			
	Deloitte	Pub & Priv	Procedure Time	0			
	H8	Priv	Surgeon Start to Xfer from OR	1	7	14.5	48.28
Ш	H13	Priv	Surgeon Start to Xfer from OR	0			
M	H15	Priv	Op Start to Recovery Admission	0			
_ 2 N	H16	Pub	Proc Start to Recovery Admission	0			
55	H17	Pub	Surgical Start to Xfer from OR	0			
RA.	H18	Priv	Proc Start to Xfer from OR	1	7	15	46.67
ΡEI	H19	Pub	Positioning to Ex Theatre	0	5	20	25
ō		Pub & Driv	Operation Start to Appentiate Finis	1 0	5	20	20
	MRS	Pub & Priv	Appendion Start to Anaesthetist Timis	3	12 33	20	61 65
	H1	Priv	Anaesthetic Start to On End	0	12.00	20	01.05
	H4	Priv	Anaesthetic Start to Op End	0			
	H5	Priv	Anaesthetic Start to Surgery End	0			
Ē	H6	Priv	Anaesthetic Start to Op End	0			
ð	H8	Priv	Patient in Theatre to Drapes Removed	1	7	13.5	51.85
Ę	H9A	Priv	Inpatient in A. Bay to Surgery Finish	1	5	10	50
≥	H9B	Day	Day Surgery, Anaesthetist Start to Surgery I	1	5	20.57	24.31
<u></u>	H10	Priv	Anaesthetic Start to Op End	0			
Ш	H13	Priv	Anaesthetic Start to Surgeon End	0			
Τ	птэ H16	PIIV	Anaesthetic Start to Proc End	0			
AES	H17	Pub	Anaesthetic Start to Surgical End	0			
Ň	H18	Priv	Anaesthetic Start to Proc End	1	7	15	46.67
4	H19	Pub	Anaesthetic Start to Dressings Applied	0			
	H20	Pub	Anaesthetist Start to End Dressings	1	5	20	25
	CANS	Pub & Priv	Anaesthetist Start to Operation Finish	0			
	Deloitte	Pub & Priv	Anaesthetic Time	0			
2)	H8	Priv	Patient in Theatre to Xfer from OR	1	7	14.5	48.28
AT	H11	Priv	Anaesthetic Start to Xfer to Recovery	0			
0	H12	PUD Priv	Anaesthetic Start to Xfer from OP	0			
Ш	H14	Pub	Anaesthetic Start to Recovery Admission	0			
Σ	H15	Priv	Anaesthetic Start to Recovery Admission	0			
<u>0</u>	H16	Pub	Anaesthetic Start to Recovery Admission	0			
ET	H17	Pub	Anaesthetic Start to Xfer from OR	0			
H	H18	Priv	Anaesthetic Start to Xfer from OR	1	7	15	46.67
ES	H19	Pub	Anaesthetic Start to Ex Theatre	0			
N	H20	Pub	Anaesthetist Start to Admit Recovery/ICU	1	5	20	25
٩	CANS	Pub & Priv	Anaesthetist Start to Anaesthetist Finis	0			
Ê	H2 Llo	Priv Driv	Total Time in Theatre	0			
Ē	H7	Dav	Total Time in Theatre	0			
ЯE	H11	Priv	Dress, scrub etc. to Xfer to Recovery	0			
ATI	H15	Priv	Theatre Reception to Recovery Admission	0			
뽀	H19	Pub	In Op Suite to Ex Theatre	0			
	C'mix Put	Pub	Casemix Public Theatre Time	1	7	11	63.64
É ₩	C'mix Priv	Priv	Casemix Private Theatre Time	0			
M	C'mix Oth	Day & Othe	Casemix Other Theatre Time	0			
_ <b>⊢</b>	WA	Priv	WA Group Total Time in Theatre	0			

\* Median ratio of NEUR intra time estimates to

ОРТ

(excluding H4, H6, H9A, H9B and H11) Unweighted = 49.3 %

### **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.


### **Attachment 3 - Continued**

### Summary Report for Technical skill etc.

Rating	Freq.	Percentage	Cum.
			Percentage
3	1	1.2%	1.2%
4	8	9.5%	10.7%
5	1	1.2%	11.9%
6	11	13.1%	25.0%
7	25	29.8%	54.8%
7.5	1	1.2%	56.0%
8	37	44.0%	100.0%
Total	84	100.0%	





## **Attachment 3 - Continued**

### Summary Report for Stress

Rating Freq. Percentage Cum. 00%	100%
Percentage	$\overline{I}$   100 %
2 6 7.1% 7.1% <sub>80%</sub>	- 90%
3 2 2.4% 9.5%	
4 1 1.2% 10.7% <sub>70%</sub>	80%
6 3 3.6% 14.3%	700/
6.5 3 3.6% 17.9% 60%	
7 4 4.8% 22.6%	- 60%
8 65 77.4% 100.0% 50%	
Total 84 100.0%	/ 50%
40%	/ _
Number of missing values = 0	/ 40%
30%	
	50%
20%	- 20%
	- 10%
	<b>7 8</b>

# **Attachment 4 - Links with Other Specialties**

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

	Consultatio			
Specialty	Procedure	n	Total	
	Items	Items	Items	
Gen. Prac. & Emergency Med.	1	0	1	
Oral and Maxillo-Facial Surgery	0	16	16	
Obstetrics / Gynaecology	0	0	0	
General Surgery	0	0	0	
Cardio Thoracic Surgery	0	0	0	
Neurosurgery	0	23	23	
Orthopaedic Surgery	0	65	65	
Paediatric Surgery	0	0	0	
Plastic Surgery	0	11	11	
Urology	0	0	0	
Vascular Surgery	0	0	0	
Ophthalmology	4	0	4	
ENT	4	0	4	
Anaesthesia	0	65	65	
Dermatology	0	0	0	
Paediatric / Thoracic Medicine	0	63	63	
General Medicine	1	46	47	
Cardiology, Renal, ICU	0	0	0	
Radiation, Oncology	0	0	0	
Gastroenterology	0	0	0	
Haematology, Medical Oncolog	0	0	0	
Psychiatry	0	54	54	
Total	8	65	73	

Number	of	Links	with	Other	S	pecialties
	<b>U</b> I	LIIKS	<b>VVILII</b>	Cuici		

# Glossary

Consultation Iter	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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

# **Clinical Haematology and Medical Oncology**

# **Summary Status Report**

November 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 Clinical Haematology and Medical Oncology Consensus Group.

The Clinical Haematology and Medical Oncology Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 46 items. These comprised 24 procedure items and 22 consultation items.

Analysis of this information showed:

- The median ratio of Clinical Haematology and Medical Oncology's intra time estimates to NCCH's Theatre Times Database observed procedure times was 85.7%. This implies a tendency to under estimate intra times.
- The group gave significantly lower ranks to the procedure items than to the consultation items (p < 0.01).
- The ranks given to link items were not significantly different from those given to non-link items. Nor were the ranks given to the two potential core items significantly different from those given to the remaining items.
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 2.4. This is lower than the median observed for specialties so far examined. There could be some difficulty in aligning Clinical Haematology and Medical Oncology's rankings and ratings with those of the other groups.
- The imputed relative values<sup>1</sup> given to procedure items were significantly lower in relative (i.e. percentage) terms than those given to consultation items.
- There was no significant difference between the imputed relative values given to link items and those given to non-link items.
- There was no significant difference between the imputed relative values given to the two good map items and those given to the poor/no map items.
- The correlation between the imputed relative values for Clinical Haematology and Medical Oncology and schedule fee was reasonable (R<sup>2</sup> = 73%). However it was largely influenced by one item.

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

<sup>&</sup>lt;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 Clinical Haematology and Medical Oncology are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 38 minutes and the mean total time was 52 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1						
	Pre	Intra	Post			
	Service	Service	Service	Total Time		
Mean	6	38	8	52		
SD	7	36	5	44		
Min	0	10	0	15		
Max	30	180	30	230		

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

Table 2.2						
Average	Pre	Intra	Post	Total		
Times	Service	Service	Service	Time		
Procedure Items	9.1	33.5	8.0	50.6		
Consultation Items	2.9	42.3	8.9	54.1		
Total Items	6.1	37.7	8.4	52.2		

A summary breakdown is also provided in Table 2.2.

Clinical Haematology and Medical Oncology'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 Clinical Haematology and Medical Oncology's intra time estimates to the observed procedure times was 85.7%. This implies a tendency by this Consensus Group to under 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 Clinical Haematology and Medical Oncology are set out in Table 3.1 together with associated standard deviations and ranges.

The mean ratings were 6.7 for cognitive skill, 6.8 for technical skill and 6.8 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 3.

Table 3.1							
	Cognitive	Technical	Stress	Total			
	Skill	Skill		Intensity			
Mean	6.7	6.8	6.8	20.3			
SD	2.1	1.5	2.3	5.5			
Min	3.0	5.0	3.0	12.0			
Max	10.0	10.0	10.0	28.0			

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						
Intensity	Cognitive	Technical	Stress	Total		
Ratings	Skill	Skill		Intensity		
Procedure Items	5.2	6.2	5.1	16.5		
Consultation Items	8.5	7.5	8.6	24.6		
Total Items	6.7	6.8	6.8	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 (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 lower ranks than the consultation items (sum of ranks test, p < 0.01).

Table 4.1						
Type of Item	Number	Ranking				
	Reviewed	Highest	Lowest	Average		
Procedure	24	1	46	28.6		
Consultation	22	5	43	18.0		
Total	46	1	46	23.5		

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 Clinical Haematology and Medical Oncology Consensus Group assessed 30 link items. These comprised all 22 of their consultation items and 8 of the 24 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 not significantly different from those given to non-link items.

Table 4.2					
Type of Item	Number	Ranking			
	Reviewed	Highest	Lowest	Average	
Consultation	22	5	43	18.0	
Procedure-Link	8	27	44	35.7	
Total Link	30	5	44	22.7	
Non-Link (Procedure)	16	1	46	25.0	
Total	46	1	46	23.5	

Good maps of Clinical Haematology and Medical Oncology's items to CPT were available for 2 of their 46 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 difference was not significant.

	Table	4.3					
Type of Item	Number	Ranking					
	Reviewed	Highest	Lowest	Average			
Good Map	2	2	25.5	13.8			
Poor/Non Map	44	1	46	23.9			
Total	46	1	46	23.5			

### 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 Clinical Haematology and Medical Oncology is 1 to 31. This ratio is reduced to 17 when the highest IRV is removed.

By dividing imputed relative values by time we can impute <u>relative</u> rates of pay. The group has not weighted the component times (pre: intra: post) differently so the range in relative rates of pay depends on intensity alone and is 1 to 2.4.

This range in relative rates of pay is lower than the median observed for specialties examined so far<sup>3</sup>. The lack of weighting of component times and the limited variation in intensity ratings means that there could be some difficulty in aligning Clinical Haematology and Medical Oncology'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 imputed relative values given to procedure items were only significantly lower than those given to consultation items when log transformed data were tested (t test, p < 0.01). There was no significant difference between the imputed relative values given to link items and those given to non-link items. There were only two good map items and there was no significant difference between the imputed relative values given to them and those given to poor/no map items.

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Table 5.1									
	Number		IRVs						
Type of Item	Reviewed	Mean <u>+</u>	SD	Low	High				
Consultation	22	1650 <u>+</u>	899	262.5	3135.0				
Procedure	24	1088 <u>+</u>	1478	202.5	6325.0				
Link	30	1322 <u>+</u>	946	247.5	3135.0				
Non-link	16	1422 <u>+</u>	1728	202.5	6325.0				
Good Map	2	2056 <u>+</u>	1943	682.5	3430.0				
Poor/No Map	44	1325 <u>+</u>	1239	202.5	6325.0				
Total	46	1357 <u>+</u>	1255	202.5	6325.0				

A plot of Clinical Hematology and Medical Oncology's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). The fit is reasonable  $(R^2=0.73)^4$  and is consistent with a straight line relationship through the origin. However the relationship is strongly influenced by MBS item 13760. There are also a number of outliers which should be investigated. These comprise MBS item numbers 12506,13750, and 13755.

 $^4\;$  An R  $^2$  value of 0.73 means that the line explains 73% 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 51% of the variation as against 73% previously. There are again a number of outliers which should be investigated. MBS item numbers 13933 and 13939, which are chemotherapy items, appear to incorporate other costs in their schedule fee. The other outliers are MBS item number 30087 in addition to 13750 and 13755 which were mentioned previously.



Figure 5.2

A plot of Clinical Haematology and Medical Oncology IRVs against CPT RV is not shown because it comprises only two items. However, the two points are very consistent with a straight line through the origin (adjusted  $R^2 = 0.97$ ).

### **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**



### **Attachment 1 - Continued**

#### **Summary Report for Intra-Service Time**



## **Attachment 1 - Continued**

#### **Summary Report for Post-Service Time**

Time	Freq.	Percentage	Cum.										
			Percentage										
0	3	6.5%	6.5%	0							_		⊤ 100%
4	2	4.3%	10.9%								_		90%
5	14	30.4%	41.3%	0					<b>/</b>				0,00/
8	9	19.6%	60.9%										- 00%
10	11	23.9%	84.8%	0									- 70%
12	1	2.2%	87.0%	0									- 60%
15	3	6.5%	93.5%	Ĵ,									- 50%
20	2	4.3%	97.8%	0			-	_					40%
30	1	2.2%	100.0%										
Total	46	100.0%		0	/	1 1	-	-					30%
													- 20%
Number of mi	issing values	s = 0		0								l	- 10%
	-			0	, <b> </b> ,			,					+ 0%
				0	4	5	8	10	12	15	20	30	
							Ti	me (Minute	es)				

#### COMPARISON OF CLINICAL HAEMATOLOGY AND MEDICIAL ONCOLOGY (CHAMO) INTRA TIME ESTIMATES WITH OTHER ESTIMATES

<b>T</b> :	OTHER TIME ESTIMATE (OTE)			No. of	Average	Ratio 100 x	
Time		Type	Definition of Time *	common			CHAMO/OT
	Ни	l ype Priv	Knife to Skin _to_ Dressing Applied	0	CHAMO	OIE	E
ST	H6	Priv	Knife to Skin -to- Drapes Removed	0			
0	H11	Priv	Pt Prepped -to- Drapes Removed	0			
	H1	Priv	Pt Positioned -to- Drapes Removed	1	20.0	23.3	85.7
	H8	Priv	Pt Positioned -to- Drapes Removed	2	12.5	27.0	46.3
*	H10	Priv	Pt Positioned -to- Drapes Removed	0	40.0	00.0	00.5
ME	H13 H15	Priv	Pt Positioned -to- Drapes Removed	1	10.0	26.0	38.5
Ē	H16	Pub	Pt Positioned to- Drapes Removed	4	31.3	30.5	102.5
No	H17	Pub	Surgeon with Pt -to- Drapes Removed	1	80.0	49.2	162.8
FA O	H18	Priv	Pt Positioned -to- Drapes Removed	2	10.0	18.1	55.3
ER	H19	Pub	Pt Positioned -to- Dressing Applied	0			
OP	H20	Pub	Pt Positioned -to- Dressing Applied	2	12.5	23.9	52.4
	APHA	Priv	Surgeon with Pt -to- Surgeon Leaves Pt	1	20.0	43.0	46.5
	CANS Doloitto	Pub & Priv	Surgeon with Pt -to- Surgeon Leaves Pt	3	38.3	34.7	110.6
	H8	Priv	Pt Positioned to- Trans to Recovery Staff	2	12.5	31.0	40.3
	H9A	Priv	Pt Positioned -to- Trans. to Recovery Staff	1	20.0	12.5	160.0
Е 2	H9B	Priv/Day	Pt Positioned -to- Trans. to Recovery Staff	1	80.0	90.0	88.9
Σ	H13	Priv	Pt Positioned -to- Trans. to Recovery Staff	1	10.0	31.0	32.3
ہ آی آ	H15	Priv	Pt Positioned -to- Trans. to Recovery Staff	0			
5 7	H16	Pub	Pt Positioned -to- Trans. to Recovery Staff	4	31.3	34.6	90.2
A S	H17	Pub	Surgeon with Pt -to- Trans. to Recovery Staff	1	80.0	55.9	143.2
Ë	H18	Priv	Pt Positioned -to- Trans. to Recovery Staff	2	10.0	19.6	51.2
ō	H19 H20	Pub	Pt Positioned -to- Trans. to Recovery Stall	2	17.5	8.0 10.8	218.8
	CANS	Pub & Priv	Surgeon with Pt -to- Trans. to Recovery Staf	3	38.3	40.0	95.8
	H1	Priv	Prep. Anaesto- Drapes Removed	1	20.0	34.3	58.3
	H4	Priv	Anaesthetist with Pt -to- Dressing Applied	0			
	H6	Priv	Prep. Anaesto- Drapes Removed	0			
ų	H8	Priv	Prep. Anaesto- Drapes Removed	2	12.5	30.5	41.0
F	H10	Priv	Prep. Anaesto- Drapes Removed	0			
ы П С	H13	Priv	Anaesthetist with Pt -to- Drapes Removed	1	10.0	30.0	33.3
ΞĘ	H15	Priv	Induction of Anaes -to- Drapes Removed	0	21.2	1E 1	68.0
ST ST	H17	Pub	Prep. Anaesto- Dressing Applied	4	80.0	40.4 79.3	101.0
AE	H18	Priv	Anaesthetist with Pt -to- Drapes Removed	2	10.0	20.0	49.9
AN	H19	Pub	Prep. Anaesto- Dressing Applied	1	20.0	12.5	160.0
	H20	Pub	Prep. Anaesto- Dressing Applied	4	13.8	105.1	13.1
	CANS	Pub & Priv	Prep. Anaesto- Surg.Leaves Pt	3	38.3	46.3	82.7
	Deloitte	Pub & Priv	Induction of Anaesto- Drapes Remove	0		10.0	
	MBS	Pub & Priv	Anaesthetic Time Units as per MBS Schedule	4	32.5	48.8	66.7
		Priv/Dov	Prep. Anaes -to- Trans. to Recovery Staff	0			
		Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	2	12.5	34 5	36.2
2	H9A	Priv	Prep. Anaesto- Trans. to Recovery Staff	1	20.0	16.0	125.0
N N	H9B	Priv/Day	Prep. Anaesto- Trans. to Recovery Staff	1	80.0	120.0	66.7
C T	H11	Priv	Prep. Anaes -to- Trans. to Recovery Staff	0			
E .	H12	Pub	Prep. Anaesto- Trans. to Recovery Staff	0			
Ξõ	H14	Pub	Prep. Anaesto- Trans. to Recovery Staff	5	26.0	45.4	57.3
ES	H15	Priv	Induction of Anaesto- Trans. to Recovery Staff	0	21.2	10.6	62.1
<b>A</b> A	H17	Pub	Prep. Anaesto- Trans. to Recovery Staff	4	80.0	49.0	03.1
∢	H19	Pub	Prep. Anaesto- Trans. to Recovery Staff	2	17.5	21.8	80.5
	H20	Pub	Prep. Anaesto- Trans. to Recovery Staff	4	13.8	106.7	12.9
I	CANS	Pub & Priv	Prep. Anaesto- Trans. to Recovery Staff	3	38.3	51.7	74.2
	WAGroup	Priv	Induction of Anaesto- Trans. to Recovery Sta	4	13.8	22.5	61.1
	H2	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	2	15.0	19.9	75.3
Ä	H3	Priv	Anaesthetist with Pt to Trans.to Recovery Staff	0			
<b>I</b> I		PfIV Driv	Anaesthetist with Pt -to- Trans. from Recovery	0	10.0	25.0	20 6
ЩЩ	H15	Priv	Anaesthetist with Pt -to- Trans to Recovery Staff	0	10.0	35.0	20.0
Ē	H18	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	2	10.0	21.5	46.5
l ≝ ⊂	H19	Pub	Pt. Arrives in Theatre -to- Trans.to Recovery Staff	1	15.0	22.5	66.7
Σ	C'mix	Pub	Anaesthetist with Pt -to- Trans.to Recovery Staff	11	22.7	47.0	48.3
	C'mix	Priv	Anaesthetist with Pt -to- Trans.to Recovery Staff	9	21.7	24.8	87.4
	C'mix Other	Day & Other	Anaesthetist with Pt -to- Trans.to Recovery Staf	1	10.0	16.5	60.6

\* Definition of Time

- see Attachment A

\* Median ratio of CHAMO intra time estimates to OPT

Unweighted = 55.3 % Weighted (for number of items in common) = 85.7 %

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

PATHWAYS FOR SURGEON AND			PT ENTI OR	ERS ANAESTHE OPERATING RO	TIC BAY DOM	START	OP TIME			1			END C	P TIME	XFER TO RECOV	XFER FROM RECOV		
AN/ ID		TIST	PT ENTERS OP SUITE	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	Reversal of anaes	Xfer of Pt to Recov. Staff	
Hosp4	H4OST	Priv																
Hosp6	H6OST	Priv																
Hosp11	H11OST	Priv																
Hosp1	H1OPT	Priv						-										
Hosp8	H10OPT	Priv						-										
Hosp13	H13OPT	Priv						-	1									
Hosp15	H15OPT	Priv						-	1									
Hosp16	H16OPT	Pub							i –									
Hosp17	H17OPT	Pub																
Hosp18	H18OPT	Priv						-										
Hosp 19	H190PT	Pub						-										
APHA	APHAOPT	Priv																
CANS	CANSOPT	Pub & Priv																
Deloitte	DTOPT	Pub & Priv							1									
Hosp8	H8OPT2	Priv						_										
Hosp9A	H9AOPT2	Priv						-	!									
Hosp9B Hosp13	H9BOP12	Priv/Day Priv						-	1									
Hosp15	H15OPT2	Priv						-	1	1								
Hosp16	H16OPT2	Pub							1. J.	1 - C								
Hosp17	H17OPT2	Pub																
Hosp18	H18OPT2	Priv						_										
Hosp19	H19OPT2	Pub						-	1	1								
Hosp20	H200P12	Pub & Priv																
Hosp1	H10AT	Priv																
Hosp4	H4OAT	Priv																
Hosp6	H6OAT	Priv																
Hosp8	H8OAT	Priv																
Hosp10	H10OAT	Priv											I					
Hosp13	H13OAT	Priv																
Hosp15	H16OAT	Pub																
Hosp17	H17OAT	Priv																
Hosp18	H18OAT	Pub																
Hosp19	H19OAT	Pub																
Hosp20	H20OAT	Pub & Priv																
CAnS	CANSOAT	Pub & Priv																
MBS	MBSOAT2	Pub & Priv																
Hosp5	H5OAT2	Priv																
Hosp7	H7OAT2	Priv/Day																
Hosp8	H8OAT2	Priv																
Hosp9A	H9AOAT2	Priv																
Hosp9B	H9BOAT2	Priv/Day																
Hosp12	H12OAT2	Pub																
Hosp14	H14OAT2	Pub																
Hosp15	H15OAT2	Priv																
Hosp16	H16OAT2	Pub																
Hosp17	H17OAT2	Pub																
Hosp19	H190AT2	Pub																
CANS	CANSOAT2	Pub & Priv																
WAGroup	WAOAT2	Priv																
Hosp2	H2THT	Priv																
Hosp3	НЗТНТ	Pub																
Hosp11	H11THT	Pub																
Hosp13	H13THT	Priv																
Hosp15	H15THT	Priv																
Hosp19	H19THT	Day & Other																
C'mix -Pub	CMXPUTHT	Priv																
C'mix -Pte	CMXPVTHT	Priv																
C'mix-oth	CMXOTTHT	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.



### **Attachment 3 - Continued**

#### Summary Report for Technical skill etc.



### **Attachment 3 - Continued**

#### **Summary Report for Stress**



# **Attachment 4 - Links with Other Specialties**

The number of link items between Clinical Haematology and Medical Oncology and the other Consensus Groups is set out below.

Crasialty	Procedure	Consultation	Total
Specialty	Items	Items	Items
Gen. Prac. & Emergency Med.	3	0	3
Facio-max Surgery	0	16	16
Obstetrics / Gynaecology	0	0	0
General Surgery	0	22	22
Cardio Thoracic Surgery	0	0	0
Neurosurgery	0	22	22
Orthopaedic surgery	0	22	22
Paediatric Surgery	0	13	13
Plastic Surgery	0	0	0
Urology	1	0	1
Vascular Surgery	0	0	0
Ophthalmology	0	0	0
ENT	0	3	3
Anaesthesia	4	22	26
Dermatology	0	7	7
Paediatric / Thoracic Medicine	2	22	24
General Medicine	2	18	20
Cardiology, Renal, ICU	1	0	1
Radiation, Oncology	0	22	22
Gastroenterology	0	22	22
Neurology	0	22	22
Psychiatry	0	22	22
Total	8	22	30

#### Number of Links with Other Specialties

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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

# **Psychiatry**

# **Summary Status Report**

September 24, 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 Psychiatry Consensus Group.

The Psychiatry Consensus Group provided time estimates, intensity ratings and internally consistent rankings for 61 items. These comprised 1 procedure item and 60 consultation items. There were 54 link items (all consultation); but there were no potential core (i.e. good map) items.

Analysis of the data showed:

- the intra time estimate on the one procedure item was much higher than NCCH's Theatre Times Database observed procedure times (25 minutes as against 9.4 minutes).
- there was no bias in the ranking of link items.
- The maximum range in relative rates of pay<sup>1</sup> implied by the Group's rankings was 1 to 7.8. This is considerably higher than the median observed for specialties so far examined. It may therefore be difficult to align Psychiatry's items with those of other groups.
- There was no significant difference in imputed relative values<sup>1</sup> between link items and non-link items.
- The correlation between the imputed relative values for Psychiatry and Medicare Benefits Schedule Fee was high ( $R^2 = 90\%$ ).

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

<sup>&</sup>lt;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 Psychiatry are set out in Table 2.1 together with associated standard deviations and ranges.

The mean intra service time was 44 minutes and the mean total time was 63 minutes. Full frequency distributions and histograms of these distributions are provided in Attachment 1.

Table 2.1									
	Pre	Pre Intra Post							
	Service	Service	Service	Time					
Mean	7	44	11	63					
SD	4	23	6	29					
Min	1	5	1	8					
Max	20	83	25	123					

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 the procedure item, consultation items and all items.



#### Figure 2.1

Table 2.2							
Average	Pre	Intra	Post	Total			
Times	Service	Service	Service	Time			
Procedure Item	5.0	25.0	1.0	31.0			
Consultation Items	7.3	44.5	11.3	63.1			
Total Items	7.2	44.2	11.1	62.5			

A summary breakdown is also provided in Table 2.2.

Psychiatry only has one procedure item. The intra time estimate for this was compared against our data base of actual theatre times obtained from hospitals and other studies.

Two hospitals had data on this procedure taken over 1029 and 8 observations. They both had very similar mean values (9.3 minutes and 9.4 minutes). These are considerably lower than Psychiatry's estimate of 25 minutes as is the MBS Anaesthetic time of 15 minutes.

# 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 9.0 for cognitive skill, 8.8 for technical skill and 8.7 for stress. Full frequency distributions and histograms of these distributions are provided in Attachment 2.

		Table 3.1		
	Cognitive	Technical	Stress	Total
	Skill	Skill		Intensity
Mean	9.0	8.8	8.7	26.5
SD	1.4	1.4	1.5	4.1
Min	5.0	5.0	5.0	15.0
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. They are provided for the procedure item, consultation items and all items.



Figure 3.1

A summary breakdown is also provided in Table 3.2.

Table 3.2								
Average								
Intensity	Cognitive	Technical	Stress	Total				
Ratings	Skill	Skill		Intensity				
Procedure Item	6.0	8.0	8.0	22.0				
Consultation Items	9.0	8.8	8.8	26.6				
Total Items	9.0	8.8	8.7	26.5				

<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. All 61 Psychiatry items were ranked accordingly. The procedure item was ranked 50<sup>th</sup>.

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 Psychiatry Consensus Group assessed 54 link items. These comprised 54 of their 60 consultation items and not the procedure item. More details of the Group's link items are provided in Attachment 3.

A breakdown of the ranks given to link items and to non-link items is set out in Table 4. The ranks given to link items were not significantly different from those given to non-link items.

Table 4						
Type of Item	Number	Ranking				
	Reviewed	Highest	Lowest	Average		
Link	54	3	61	32.09		
Non-link	7	1	50	22.57		
Total	61	1	61	31.00		

Good maps of Psychiatry's items to CPT were not available for any of their 61 items.

# 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 Psychiatry is 1 to 99.31.

By dividing imputed relative values by time we can impute <u>relative</u> 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 6.17. 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 7.80.

These ranges in relative rates of pay are considerably higher than the median observed for specialties examined so far<sup>3</sup>. In terms of deviations in rates of pay, there could therefore be some difficulty in aligning Psychiatry'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.

In this data set there is only one procedure item and there are no Good Map items so only the comparison between link items and non-link items in terms of imputed relative value (IRV) is set out in Table 5.

There was no significant difference between the imputed relative values given to link items and non-link items.

Table 5						
	Number	IRVs				
Type of Item	Reviewed	Mean <u>+</u> SD	Low High			
Link	54	729 <u>+</u> 472	16 1437			
Non-link	7	955 <u>+</u> 572	250 1561			
Total	61	755 <u>+</u> 484	16 1561			

A plot of Psychiatry's imputed relative values against existing schedule fee is set out in Figure 5.1(overleaf). Items 342, 344, and 346 are group therapy items and the schedule fee is based on a fee per patient. In the plot, the schedule fees have been adjusted to reflect the number of patients involved; 5 for Item 342, 3 for Item 344 and 2 for Item 346. The fit was good.




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 not as good as that for IRV against Schedule Fee.



### **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
1	1	1.6%	1.6%
2	1	1.6%	3.3%
5	39	63.9%	67.2%
10	12	19.7%	86.9%
15	7	11.5%	98.4%
20	1	1.6%	100.0%
Total	61	100.0%	

Number of missing values = 0



### **Attachment 1 - Continued**

#### **Summary Report for Intra-Service Time**



### **Attachment 1 - Continued**

#### **Summary Report for Post-Service Time**



### **Attachment 2 - 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.



### **Attachment 2 - Continued**

#### Summary Report for Technical skill etc.



### **Attachment 2 - Continued**

#### Summary Report for Stress



## **Attachment 3 - Links with Other Specialties**

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

Specialty	Procedure	Consultation	Total
Specialty	Items	Items	Items
Gen. Prac. & Emergency Med.	0	0	0
Oral and Maxillo-Facial Surgery	0	16	16
Obstetrics and Gynaecology	0	0	0
General Surgery	0	0	0
Cardio Thoracic Surgery	0	0	0
Neurosurgery	0	22	22
Orthopaedic Surgery	0	54	54
Paediatric Surgery	0	0	0
Plastic Surgery	0	10	10
Urology	0	0	0
Vascular Surgery	0	0	0
Opthalmology	0	0	0
ENT	0	0	0
Anaesthesia	0	54	54
Dermatology	0	0	0
Paediatric / Thoracic Medicine	0	53	53
General Medicine	0	46	46
Cardiology, Renal, ICU	0	0	0
Radiation Oncology	0	0	0
Gastroenterology	0	0	0
Neurology	0	54	54
Haematology, Medical Oncology	0	0	0
Total	0	54	54

#### Number of Links with Other Specialties

# 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	<ul> <li>A Good Map Item with, preferably, a high frequency. Core Items will be chosen on the basis of:</li> <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.		