Final Report of the Relative Value Guide Commission of Alberta

February 28, 2001

Appendix B

- Technical Papers

  -Developing the common scale

  -Assessing practice expense recovery

  -Evaluation of the Commission's methodology and process

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Appendix B: Technical Papers

Alberta Relative Value Guide

Method for Creation of the Common Scale

Cross-Links

The creation of the common scale requires the use of cross-links. Cross-links (or simply “links”) come in two types: natural links and derived links. A natural link occurs when two or more sections perform exactly the same service. The rating that each section gives the service forms a “natural” link between the intra-sectional scales of the sections. A derived link occurs when two different services, performed by two or more sections, are deemed to require the same amount of physician resource. The ratings that each section gives to the services involved forms a “derived” link between the intra-sectional scales of the sections.

In the formulation of the Alberta Relative Value Guide the vast majority (roughly 630 out of 639) are natural links. Derived links are used to augment the number of labs for the sections of Psychiatry and Physical Medicine, as these sections have only a few natural links. Links used with Psychiatry and Physical Medicine are between services that require the same amount of physician resource.

Issues Relating to the Combination of Two Sections

Development of an "Exchange Rate" Between the Sections.

Suppose we have two sections, A and B, whose intra-sectional ratings that we wish to combine. What we are seeking is a "conversion factor", r_{AB}, that converts section A’s ratings into section B's scale or vice versa. This conversion factor can also be thought of as an "exchange rate" between two currencies. For example, we could think of the section A ratings as being expressed in terms of pesos, and the section B ratings as being expressed in terms of yen; the exchange rate would then tell us that one peso equals r_{AB} yen.

The exchange rate should have the following characteristics:

1. the exchange rate which converts section A’s ratings into section B's scale, r_{AB}, should be the reciprocal of the exchange rate which converts section B’s ratings into section A's scale, r_{BA}. (In other words, if one peso equals four yen, we should have that one yen equals one quarter of a peso.);

2. the exchange rate should not be affected by non-linked items; only the links should determine the exchange rate;

3. all links (both natural and derived) should be used in determining the exchange rate; and,

4. if a section were to re-scale all their ratings by a constant factor, the exchange rate should also change by the constant factor. (In other words, if section A were to multiply all of its ratings by 10, we would want the exchange rate that converts section A’s ratings into section B's scale to decrease to one-tenth of its original value.)

Example

Here is an example of how such an exchange rate can be calculated. Suppose we are combining two sections, A and B, and suppose there are three natural links (let’s call them service codes1, 2 and 3) and one derived link between these two sections. Let’s assume that the derived link is between service 101 (which has been rated by section A) and service 201 (which has been rated by section B). Also, let’s assume that service 101 is considered to require the same physician resource as service 201, and so should have a final common relative value equal to that for service 201.

The following table illustrates the links for this example (non-linked services have not been included in the table, but presumably there are many such services within each section).

Links					
Section A			**Section B**		
Service	Value (x_i)	Number of Services (n_{Ai})	Service	Value (y_I)	Number of Services (n_{Bi})
1	x_1	n_{A1}	1	y_1	n_{B1}
2	x_2	n_{A2}	2	y_2	n_{B2}
3	x_3	n_{A3}	3	y_3	n_{B3}
101	x_{101}	n_{A101}	201	y_{201}	n_{B201}

Normalization

The first step in the process is to ensure that characteristic 4 is followed (i.e. if a section were to multiply all its ratings by a constant, the exchange rate would be decreased by the same factor). The easiest way to accomplish this is to "normalize" each section's ratings by dividing all the ratings within a section by the average value of the linked services within that section.

If we call xbar the average of the ratings for the linked services within section A (i.e. xbar = $(x_1+x_2+x_3+x_{101})/4$), and ybar the average of the ratings for the linked services within section B (i.e. ybar = $(y_1+y_2+y_3+y_{201})/4$), the "normalized" section A ratings are calculated by dividing the original ratings by xbar, and the "normalized" section B ratings are calculated by dividing the original ratings by ybar.

Use of Logarithms

Previous efforts at creating relative value guides (in particular the American work pioneered by Hsiao et. al) found evidence that their intra-sectional relative values tended to follow a normal logarithmic distribution. As a result, before beginning the linking process, those studies took the logarithms of the ratings.

However, a review of the intra-sectional relative values submitted by sections in Alberta show that the intra-sectional relative values are generally linear with respect to the existing fee schedule and, as a result, with respect to each other. Consequently, it was not necessary to take the logarithms of the normalized intra–sectional relative values.

Weighting of Links

In the RVG process, the RVG Commission decided that all links should be considered of equal value in determining the exchange rates. Consequently, all links, regardless of service volumes are to receive the same weight. The exchange rate between the sections is calculated so as to minimize the percentage changes from the normalized intra-sectional relative values. (This is a slightly modified version of the proportional weighting model; for a description see “Least-squares fitting when both variables contain errors: Pitfalls and possibilities”, J.R. Macdonald and W.J. Thompson, Am.J. Phys. 60 (1), January 1992)

As a result, for each of the linked services in section A we need to define its weight as being equal to the reciprocal of its normalized intra-sectional relative value, and the weights for the services in section B are calculated in the same fashion.

(Note that this will ensure that the calculated exchange rate is similar to the average of the exchange rates suggested by each of the cross-links).

This gives rise to the following set of normalized ratings and weights:

Links					
Section A			**Section B**		
Service	Normalized Value	Weight (p_{Ai})	Service	Normalized Value	Weight (p_{Bi})
1	x_1/xbar	1/(x_1/xbar)	1	y_1/ybar	1/(y_1/ybar)
2	x_2/xbar	1/(x_2/xbar)	2	y_2/ybar	1/(y_2/ybar)
3	x_3/xbar	1/(x_3/xbar)	3	y_3/ybar	1/(y_3/ybar)
101	x_{101}/xbar	1/(x_{101}/xbar)	201	y_{201}/ybar	1/(y_{201}/ybar)

Calculating the Normalized Exchange Rate

We can now use the normalized ratings to calculate a "normalized" exchange rate between the two sections. The normalized exchange rate can be thought of as being the slope of a regression line fitted a set of points corresponding to the links (the regression is a weighted regression, through the origin).

For each of the natural links, the point used will be (x_i/xbar ,y_i/ybar) because the section A value of the link should (in theory) correspond to the section B value. So for this example, the natural links give rise to the three points (x_1/xbar,y_1/ybar), (x_2/xbar,y_2/ybar) and (x_3/xbar,y_3/ybar).

For the derived link, service 101 should have a value that is equal to the value for service 201. This means that the point corresponding to this link is (x_{101}/xbar, y_{201}/ybar).

Having defined the points to be used, we then want to find the value for the exchange rate, r_{AB}, which minimizes the following function:

$$S_{AB} = \sum_{i=1}^{3} [(\frac{x_i}{xbar} - \frac{y_i}{(ybar * r_{AB})})^2 p^2_{Ai} + (\frac{y_i}{ybar} - \frac{r_{AB} x_i}{xbar})^2 p^2_{Bi}]$$

$$+ (\frac{x_{101}}{xbar} - \frac{y_{201}}{r_{AB} ybar})^2 p^2_{A101} + (\frac{y_{201}}{ybar} - \frac{r_{AB} x_{101}}{xbar})^2 p^2_{B201}$$

Where the p values are the weights as given in the earlier table.

Although this function looks complicated, it is actually fairly simple to work with. It is a sum of squares which is a function of only one variable, namely r_{AB} that can be easily constructed and minimized using spreadsheets.

Calculating the Exchange Rate

Having calculated the normalized exchange rate, r_{AB}, the exchange rate between the original section A ratings and the original section B ratings is given by dividing r_{AB} by xbar and multiplying by ybar, i.e. exchange rate from A to B = (r_{AB} * ybar)/xbar.

The exchange rate between the original section B ratings and the original section B ratings is the reciprocal, i.e. xbar/(r_{AB} *ybar).

Resolving Differences of Opinion

Once we have the exchange rate we can find the common relative values for non-linked services by simply applying the exchange rate. However, for linked services it still remains to resolve differences in opinion regarding their value. For links the simplest method is to take the weighted average of the converted x_i values and the y_i values, where the weights are the number of times the service is performed by each section.

In the original section B scale, the rating for a linked item is given by:

$$\beta_i = [\frac{x_i r_{AB}(\frac{ybar}{xbar})n_{Ai} + y_i n_{Bi}}{n_{Ai} + n_{Bi}}]$$

In the original section A scale, the rating for the link is given by:

$$\alpha_i = [\frac{x_i n_{Ai} + y_i r_{BA}(\frac{xbar}{ybar})n_{Bi}}{n_{Ai} + n_{Bi}}]$$

Note that:

$$\alpha_i = r_{BA}(\frac{xbar}{ybar})[\frac{x_i r_{AB}(\frac{ybar}{xbar})n_{Ai} + y_i n_{Bi}}{n_{Ai} + n_{Bi}}] = \frac{1}{\beta_i}$$

(Note that in cases where the link is done only very rarely, the commission has decided to use a simple average rather than a weighted average, and that special rules were used in some special circumstances).

Combining More Than One Section

When there are more than two sections to be combined an interesting effect occurs. Suppose there are three sections, A,B, and C that we wish to combine. We could use the approach for combining two sections to develop a set of "pairwise" exchange rates between all three sections, i.e. we could develop one exchange rate between sections A and B, r_{AB}, a second exchange rate between sections A and C, r_{AC}, and a third exchange rate between sections B and C, r_{BC}. Now the interesting thing occurs: in general $r_{AB}*r_{BC}$ does not equal r_{AC}. This means that if we first convert section A's ratings into section B's scale, and then convert the results into section C's scale, we get a different result than if we convert directly from section A's scale into section C.

This occurs because the links which join section A to C directly, will not usually be completely consistent with the links which join section A to section C indirectly, through section B.

This presents an interesting choice, because it means that if we were first to combine two sections, then add in others one at time without recalculating all the exchange rates each time, the order in which we combined the sections would matter. (The reason for this is that we would be, in essence, giving more weight to the links with those sections that we first combine).

Consequently, we can either adopt a strategy of combining the sections one at a time without recalculating all the exchange rates each time (in which case we would have to first agree on the order in which the sections would be combined, for example, first combining those sections which are most closely linked), or we can adopt a strategy of combining the sections one at a time in which we do recalculate all the exchange rates each time so as to ensure that all the exchange rates are consistent (in which case, we would have to be prepared for the fact that as we add in sections, some of exchanges rates we calculated earlier will change).

The recommended approach, which the Commission has adapted is to follow the second strategy where all the exchange rates are recalculated after each new section is included because:

a. the order in which we add sections should not matter to the final results;

b. there is no apparent reason why "direct" links should take precedent over "indirect" ones; and,

c. the changes that occur from re-calculating are likely to be fairly small (since changes in the exchange rates arise because of inconsistencies in the ratings of services between sections, large changes in the exchange rates will serve to identify large inconsistencies in the original ratings).

Consequently, in addition to the four principles for exchange rates which I mentioned earlier there is now a fifth one, namely consistency (in terms of currencies, if we exchange pesos into dollars and then dollars into yen, we get the same result as if we had exchanged pesos into yen directly).

Procedure For Combining More Than One Section

The requirement for consistency in exchange rates causes only minor modifications to the methodology.

Suppose there are D sections to join. There are [D(D-1)]/2 pairs of sections that exist, which means that there are D(D-1)/2 ways of combining the sections two at a time.

What we do is to follow the methodology for combining two sections for each of these pairs. This will give rise to D(D-1)/2 functions of the form S_{AB}, S_{AC}, S_{BC}, S_{AD}, etc. Then we add these functions together to create the "overall" objective function, S_{TOT}, where:

$$S_{TOT} = S_{AB} + S_{AC} + S_{BC} + S_{AD} + \ldots$$

We will also have D(D-1)/2 exchange rates to determine. However, we are going to place some constraints on these to ensure consistency (for example, if we have three sections to combine, we will have three exchange rates to determine, r_{AB}, r_{AC}, and r_{BC}, and we will have one consistency constraint, namely $r_{AB}*r_{BC} = r_{AC}$).

We can use the consistency constraints to express some of the exchange rates in terms of the others, thereby eliminating them from the "overall" objective function (for example, if we have three sections, we can eliminate r_{BC} by writing it as r_{AC}/r_{AB}). It is straightforward to show that when we have D sections to combine, we will have (D-1)(D-2)/2 consistency constraints, and (D-1) "independent" exchange rates to determine.

In other words, the "overall" objective function S_{TOT} that we will want to minimize will be a function of only D-1 variables, which can also be easily solved in a spreadsheet. (This formulation allows the exchange rates to be calculated very quickly in a spreadsheet, because:

a. the non-linked items are not needed for the calculation of the exchange rates, consequently the spreadsheets will not be very large; and,

b. the overall objective function will be a function of a relatively small number of variables).)

Other Issues

I have attached as appendices a "cookbook" description of how to use the methodology, as well as some numerical examples (as the equations actually make the process appear more complicated than it really is).

Very truly yours,

ARTHUR ANDERSEN LLP

By
Edward J. Mansfield, Ph.D.

Appendix 1.

"Cookbook" Description of the Methodology

Procedure for Combining Two Sections

Let A and B be the two sections to be combined. Let the rating within section A for service number i be x_i, and let the rating for service number j within section B be y_j. Assume that there are n natural links and d derived links between the two sections.

Step 1: Normalizing For Scale

a. Calculate the average rating for all linked items within section A (include the ratings for all links, both natural and derived, between section A and all other sections; each linked item being included once only). Call this average xbar.

b. Divide the rating for each item (both linked and non-linked) within section A by xbar. (This will simply have the effect of normalizing the ratings within section A.)

c. Calculate the average rating for all linked items within section B (include the ratings for all links, both natural and derived, between section B and all other sections; each linked item being included once only). Call this average ybar.

d. Divide the rating for each item (both linked and non-linked) within section B by ybar. (This will simply have the effect of normalizing the ratings within section B.)

Step 2: Assigning Weights

a. The weight assigned to each linked item within section A, p_{Ai}, is calculated as being the reciprocal of its intra-sectional rating divided by xbar (i.e. the reciprocal of its normalized rating).

b. The weight assigned to each linked item within section B, p_{Bi}, is calculated as being the reciprocal of its intra-sectional rating divided by ybar (i.e. the reciprocal of its normalized rating).

Step 3: Graph the Relationship Between the Linked Items

a. Graph the points that correspond to the cross-links in the original scales (For each of the links plot the points (x_i,y_i) where x_i is the section A rating and y_i is the section B rating.

b. Graph the points that correspond to the cross-links in the normalized scales (For each of the links plot the points $(x_i/xbar , y_i/ybar)$ where x_i is the section A rating and y_i is the section B rating.

(Note that the purpose of these graphs is to show the exchange rates suggested by the links.)

Step 4: Calculating the Normalized Exchange Rates

a. The normalized exchange rate from section A to section B,r_{AB} , is found by minimizing the function S_{AB}, where:

$$S_{AB} = \sum_{n} [(\frac{x_i}{xbar} - \frac{\frac{y_i}{ybar}}{r_{AB}})^2 p_{Ai}^{\ 2} + (\frac{y_i}{ybar} - r_{AB}\frac{x_i}{xbar})^2 p_{Bi}^{\ 2}]$$

$$+ \sum_{d} [(\frac{x_i}{xbar} - \frac{\frac{y_j}{ybar}}{r_{AB}})^2 p_{Ai}^{\ 2} + (\frac{y_j}{ybar} - \frac{r_{AB}\frac{x_i}{xbar}}{1})^2 p_{Bi}^{\ 2}]$$

Note that the first sum is simply the sum over all the natural links while the second sum is the sum over all the derived links. Also note that the function S_{AB} is a function of only one variable, namely r_{AB}, and can be found using a spreadsheet optimizer.

b. The normalized exchange rate from section B to section A, r_{BA}, is equal to the reciprocal of r_{AB}.

Note that the straight lines corresponding to the normalized exchange rates can now be added to the graphs of the relationship between the normalized linked items.

Step 5: Calculating the Exchange Rates Between the Original Ratings

a. The exchange rate between the original section A ratings and section B ratings is given by r_{AB} *(ybar/xbar).

b. The exchange rate between the original section B ratings and section A ratings is given by r_{BA} *(xbar/ybar), which is equal to the reciprocal of the exchange rate between the original B ratings and the original A ratings.

Note that the straight lines corresponding to the exchange rates between the original ratings can now be added to the graphs of the relationship between the linked items in the original scales.

Step 6: Converting to a Common Scale

a. The linked and non-linked items from section A can now be multiplied by the exchange rate between section A and section B (or vice versa) to convert all items to a common scale.

Step 7: Resolving Differences of Opinion

a. For linked services it still remains to resolve differences in opinion regarding their value. For natural links the simplest method is to take the weighted average of the converted x_i values and the y_i values (where the weights used are now the number of times the service is performed by each section). In the original section B scale, the rating for a link is given by:

$$\beta_i = [\frac{x_i r_{AB}(\frac{ybar}{xbar}) w_{Ai} + y_i w_{Bi}}{w_{Ai} + w_{Bi}}]$$

b. In the original section A scale, the rating for the natural link service is given by:

$$\alpha_i = [\frac{x_i w_{Ai} + y_i r_{BA}(\frac{xbar}{ybar}) w_{Bi}}{w_{Ai} + w_{Bi}}]$$

Combining of More Than One Section

Suppose there are D sections to combine. This will mean there are D(D-1)/2 pairs of sections, and D(D-1)/2 distinct exchange rates to determine. The exchange rates are shown below (recall, for example, that r_{BA} is simply the reciprocal of r_{AB}):

Matrix of Exchange Rates

Section	A	B	C	D	.	.	.
A	-	r_{AB}	r_{AC}	r_{AD}			
B		-	r_{BC}	r_{BD}			
C			-	r_{CD}			
D				-			
.							
.							
.							

It is important to note that although the methodology for combining more than one section may appear somewhat complicated, it can be organized and carried out quite easily within a computer spreadsheet.

Step 1: Pairwise Calculations

a. For each of the D(D-1)/2 pairs of sections, follow the methodology for the combining of two sections to the stage where the functions S_{AB}, S_{AC}, S_{BC}, S_{AD}, etc. are formed.

b. Add these functions together to create the "overall" objective function, S_{TOT}, where:

$$S_{TOT} = S_{AB} + S_{AC} + S_{BC} + S_{AD} + \ldots$$

Note that at this point, S_{TOT} will be a function of D(D-1)/2 exchange rates.

Step 2: Consistency Constraints

a. Construct the (D-1)(D-2)/2 consistency constraint equations.

For three sections there is one constraint:

1. $r_{AB} * r_{BC} = r_{AC}$

For four sections there are three constraints:

1. $r_{AB} * r_{BC} = r_{AC}$
2. $r_{AB} * r_{BC} * r_{CD} = r_{AD}$
3. $r_{BC} * r_{CD} = r_{BD}$

For five sections there are six constraints:

1. $r_{AB} * r_{BC} = r_{AC}$
2. $r_{AB} * r_{BC} * r_{CD} = r_{AD}$
3. $r_{AB} * r_{BC} * r_{CD} * r_{DE} = r_{AE}$
4. $r_{BC} * r_{CD} = r_{BD}$
5. $r_{BC} * r_{CD} * r_{DE} = r_{BE}$
6. $r_{CD} * r_{DE} = r_{CE}$

And so on.

Step 3. Use the Constraints to Eliminate Variables

a. The (D-1)(D-2)/2 consistency equations can be used to express (D-1)(D-2)/2 exchange rates in terms of the remaining (D-1) exchange rates. This will mean that S_{TOT} will become a function of only the (D-1) "independent" exchange rates. For example, three sections we could have r_{AB}, and r_{AC} as "independent exchange rates, with r_{BC} having been eliminated using the consistency equation.

Step 4. Minimize S_{TOT}

a. Use a spreadsheet optimizer to determine the values for the (D-1) independent exchange rates.

Step 5. Compute Common Relative Values

a. Having determined the exchange rates, calculate the common relative values following the methodology used for combining two sections.

RVG
COMMISSION

June _____, 1999

Dr. _____

Address _____

Dear Dr. _____:

Re: Assessment of Potential Cross-links for RVG Process

Your section advisor has identified you as a knowledgeable physician that would be able to assist the Commission in assessing RVG cross-links. Enclosed is a survey in which we ask you to assess whether the attached services are similar or dissimilar. Given you r knowledge and experience completion of the survey should take **less than a hour** of your time. Please use the attached stamped, self-addressed envelope to return the survey to the Commission by **July 15, 1999**. If you are unable to complete the survey in the time allotted please advise the Commission at (780) 427-8667.

The manner in which we intend to analyze and utilize the data is outlined in the letter to your section advisor (see attached).

Please assess the **natural cross-link codes** for their similarity of ***services*** between sections. Consider the following variables in your assessment:

- Is the process for diagnosis and treatment followed by the respective specialties the same?
- Is time spent in delivering the services essentially the same?
- Does the **average** patient seen by the respective specialist have roughly the same degree of complexity?

Please assess the **derived cross-link codes** for their similarity in ***"work required"***. Work is defined as a combination of time and intensity. In considering the similarity of "work required" please consider the following questions?

On balance are the

- time,
- skill and effort to manage the patients' chief complaint or diagnosis,
- decision making and judgement,
- communication or interpersonal skills, and
- treatment interventions essentially the same?

N.B. All procedures are to be considered "unbundled", i.e. does not include visits/consults or post operative care associated with the procedure.

Please rate the degree of similarity on a Likert scale as follows. The "service" or "work required" is:

The same or equivalent	Very similar	Probably similar	Probably not similar	Not similar	Don't know
5	4	3	2	1	0

Your time, commitment and considered work in completing this survey is much appreciated. If you have any questions or concerns please do not hesitate to call, fax or e-mail Nancy Rowan at (780) 427-8697 tel.; fax (780) 427-8114; e-mail Nrowan@telusplanet.net.

Sincerely,

Dr. John Atkinson
Chair

EXAMPLE

Natural Cross-links Procedures

Please assess the **natural cross-link codes** for their similarity of ***services*** between sections. Consider the following variables in your assessment:

- Is the process for diagnosis and treatment followed by the respective specialties the same?
- Is time spent in delivering the services essentially the same?
- Does the **average** patient seen by the respective specialist have roughly the same degree of complexity?

EXAMPLE #1

01.09 Other nonoperative bronchoscopy

General Surgery ***Total Patients GNSG*** ***188***

Specialist	*Total Patients*	*Same*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
OTOL	190	⑤	4	3	2	1	0
PED	107	5	4	③	2	1	0
RSMD	164	⑤	4	3	2	1	0

EXAMPLE #2

01.14 Other nonoperative Esophagogastroscopy/gastroscopy

General Surgery ***Total Patients GNSG*** ***5696***

Specialist	*Total Patients*	*Same*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
GAST	8953	⑤	4	3	2	1	0
GP	2222	5	4	③	2	1	0
INMD	8491	⑤	4	3	2	1	0

N.B.
Please compare the service you provide under this code with the service provided by each of your colleagues:

e.g. a) A General Surgeon to a Gastoenterologist
b) A General Surgeon to a General Practitioner
c) A General Surgeon to an Internist

EXAMPLE

Natural Cross-Links Visits/Consults

Please assess the **natural cross-link codes** for their similarity of ***services*** between sections. Consider the following variables in your assessment:

- Is the process for diagnosis and treatment followed by the respective specialties the same?
- Is time spent in delivering the services essentially the same?
- Does the **average** patient seen by the respective specialist have roughly the same degree of complexity?

EXAMPLE #1

03.03A Visit not requiring complete history and evaluation

General Practitioner's ***Total Patients GP*** ***146886***

Specialist	*Total Patients*	*Same*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
NUSG	3176	5	④	3	2	1	0
INMD	54486	5	④	3	2	1	0
DERM	4561	5	④	3	2	1	0

EXAMPLE #2

03.03B Prental visit

General Practitioner's ***Total Patients GNSG*** ***42595***

Specialist	*Total Patients*	*Same*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
OBGY	19508	5	④	3	2	1	0

EXAMPLE

Derived Cross-Links

Please assess the **derived cross-link codes** for their similarity in ***"work required"***. Work is defined as a combination of time and intensity. In considering the similarity of "work required" consider the following questions?

On balance are the
- time,
- skill and effort to manage the patients' chief complaint or diagnosis,
- decision making and judgement,
- communication or interpersonal skill, and
- treatment interventions essentially the same?

Note: Please assess the cross-link procedures as if they were **"unbundled".**

EXAMPLE #1

General Surgery

Specialist	*HSC*	*HSC Description*	*Same or equivalent*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
GNSG	19.7A	Bilateral parathyroid exploration for adenoma	5	④	3	2	1	0
NUSG	92.31B	Anterior cervical discectomy for Decompression of spinal cord and nerve roots, including osteophytectomy, single interspace						

RVG
COMMISSION

June 10, 1999

TO: RVG Section Advisors

Re: Assessment of Possible Cross-Links for RVG Process

We have compiled a pool of possible cross-links for the development of an interdisciplinary RVG. A package of potential links for your section that have been identified in a variety of jurisdictions will be sent to your next week. Our goal is to determine their relevancy in Alberta.

As discussed in April during your section's meeting with the Commission it is our intent to develop a list of cross-links that have been tested and are acceptable to Alberta physicians. The testing is an iterative process with several opportunities for section review, comment and discussion with the Commission.

The steps include:

1) Having Alberta physicians review the "possible pool" of cross-links and evaluating those for their fit in the Alberta practice environment.
2) Analyzing the data identifying strong links and discarding weak links. Note: This analysis will be shared with all sections.
3) Cross-referencing the above visit/consult links with findings from the visit consult/study.
4) Developing the 1st draft of a relative value scale for services (RVS).
5) Sharing with the sections for their review and comment:
   - all data, analysis and output of the cross-links survey
   - all links used in developing the 1st draft of the RVS
   - the first draft of the RVS
6) Redrafting the RVS following sectional review and comment.

In order to facilitate this process we ask that you identify 10 members from your section to complete the survey. We ask that you consider geographic distribution, mix of practice and willingness to participate when selecting participants. We believe that on average it will take less than an hour to complete the survey. Please call, fax or e-mail us with your recommended names by June 17, 1999. To expedite the process if you provide us with the name and city/town we can find the address.

Thank-you for your cooperation in assisting us to develop a made in Alberta RVG. If you have any questions, please do not hesitate to call, fax or e-mail Nancy Rowan at: ph.(780) 427-8697; fax (780) 427-8114; e-mail: nrowan@telusplanet.net.

Sincerely,

Dr. J. Atkinson
Chair

cc: Section President

RVG
COMMISSION

July _____, 1999

Dr. _____
Address _____
City, Alberta

Dear Dr. _____:

Re: Assessment of Cross-links

Thank you for your willingness to participate as a special advisor to the RVG Commission. Our goal is to develop a made in Alberta RVG. We view your participation as critical in helping us meet that goal.

We are working extensively with AMA sections in collecting and analyzing data. In addition, any good process requires independent input and/or critique to ensure that it stays on the right track. We look forward to your input at critical points in our process. This includes evaluation of cross-links and review of intra and intersectional scales at various points in our process.

The first task that we ask of you is to participate in a survey to assist in assessing a number of potential cross-links. We expect that completion of the survey would take less than a day of your time. An expense form is enclosed to help offset time lost in completing this task. Please use the attached stamped, self-addressed envelope to return the survey to the Commission by **July 15, 1999**. If you are unable to complete the survey in the time allotted please advise the Commission at 780-427-8667.

Please assess the **natural cross-link codes** for their similarity of ***services*** between sections. Consider the following variables in your assessment:

- Is the process for diagnosis and treatment followed by the respective specialties the same?
- Is time spent in delivering the services essentially the same?
- Does the **average** patient seen by the respective specialist have roughly the same degree of complexity?

Please assess the **derived cross-link codes** for their similarity in ***"work required".*** Work is defined as a combination of time and intensity. In considering the similarity of "work required" consider the following questions?

On balance are the

- time,
- skill and effort to manage the patients' chief complaint or diagnosis,
- decision making and judgement,
- communication or interpersonal skills, and
- treatment interventions essentially the same?

NB: All procedures are to be considered "unbundled", i.e. does not include visits/consults or post operative care associated with the procedure.

Rate the degree of similarity on a Likert scale as follows. The "service" or "work required" is:

The same or equivalent	Very similar	Probably similar	Probably not similar	Not similar	Don't know
5	4	3	2	1	0

Your time, commitment and considered work in completing this survey is much appreciated. If you have any questions or concerns please do not hesitate to call, fax or e-mail Nancy Rowan at (780) 427-8697 tel.; fax (780) 427-8114; e-mail Nrowan@telusplanet.net.

Sincerely,

Dr. John Atkinson
Chair

EXAMPLE

Natural Cross-links Procedures

Please assess the **natural cross-link codes** for their similarity of ***services*** between sections. Consider the following variables in your assessment:

- Is the process for diagnosis and treatment followed by the respective specialties the same?
- Is time spent in delivering the services essentially the same?
- Does the **average** patient seen by the respective specialist have roughly the same degree of complexity?

EXAMPLE #1

01.09 Other nonoperative bronchoscopy

General Surgery ***Total Patients GNSG 188***

Specialist	*Total Patients*	*Same*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
OTOL	190	⑤	4	3	2	1	0
PED	107	5	4	③	2	1	0
RSMD	164	⑤	4	3	2	1	0

EXAMPLE #2

01.14 Other nonoperative Esophagogastroscopy/gastroscopy

General Surgery ***Total Patients GNSG 5696***

Specialist	*Total Patients*	*Same*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
GAST	8953	⑤	4	3	2	1	0
GP	2222	5	4	③	2	1	0
INMD	8491	⑤	4	3	2	1	0

N.B.
Please compare the service you provide under this code with the service provided by each of your colleagues:

e.g. a) A General Surgeon to a Gastoenterologist
b) A General Surgeon to a General Practitioner
c) A General Surgeon to an Internist

Natural Cross-Links Visits/Consults

Please assess the **natural cross-link codes** for their similarity of ***services*** between sections. Consider the following variables in your assessment:

- Is the process for diagnosis and treatment followed by the respective specialties the same?
- Is time spent in delivering the services essentially the same?
- Does the **average** patient seen by the respective specialist have roughly the same degree of complexity?

EXAMPLE #1

03.03A Visit not requiring complete history and evaluation

General Practitioner's ***Total Patients GP*** ***146886***

Specialist	*Total Patients*	*Same*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
NUSG	3176	5	④	3	2	1	0
INMD	54486	5	④	3	2	1	0
DERM	4561	5	④	3	2	1	0

EXAMPLE #2

03.03B Prental visit

General Practitioner's ***Total Patients GP*** ***42595***

Specialist	*Total Patients*	*Same*	*Very similar*	*Similar*	*Probably not*	*Not similar*	*Don't know*
OBGY	19508	5	④	3	2	1	0

Derived Cross-Links

Please assess the **derived cross-link codes** for their similarity in ***"work required".*** Work is defined as a combination of time and intensity. In considering the similarity of "work required" consider the following questions?

On balance are the
- time,
- skill and effort to manage the patients' chief complaint or diagnosis,
- decision making and judgement,
- communication or interpersonal skill, and
- treatment interventions essentially the same?

Note: Please assess the cross-link procedures as if they were **"unbundled".**

EXAMPLE #1

General Surgery

Specialist	***HSC***	***HSC Description***	***Same or equivalent***	***Very similar***	***Similar***	***Probably not***	***Not similar***	***Don't know***
GNSG	19.7A	Bilateral parathyroid exploration for adenoma	5	④	3	2	1	0
NUSG	92.31B	Anterior cervical discectomy for Decompression of spinal cord and nerve roots, including osteophytectomy, single interspace						

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
13.62A	Ventilatory support, in ICU	ANES	CARD
49.73A	Temporary right heart catheter pacemaker	ANES	CARD
49.98B	Pharmacological manipulation of physiological function and recording thereof	ANES	CARD
03.05A	Intensive care unit visit per 15 mins	ANES	CVT
03.07B	Repeat consultation	ANES	CVT
46.04A	Tube thoracostomy, That for conditions other than empyema	ANES	CVT
16.89A	Injection for discogram	ANES	DIRD
18.22B	Caeliac plexus ganglion block, with sclerosing agents (alcohol or phenol)	ANES	DIRD
18.29A	Chemical sympathectomy under fluoroscopic or CT control	ANES	DIRD
50.94A	Introduction of venous catheter for CVP monitoring	ANES	DIRD
93.91B	Joint aspiration, injection, other joints	ANES	DIRD
03.05A	Intensive care unit visit per 15 mins	ANES	GNSG
46.04B	Tube thoracostomy, That for empyema	ANES	GNSG
50.94A	Introduction of venous catheter for CVP monitoring	ANES	GNSG
18.29E	Paravertebral block	ANES	ORTH
13.4 A	Scalp vein transfusion or infusion	ANES	PED
50.94A	Introduction of venous catheter for CVP monitoring	ANES	PED
13.62A	Ventilatory support, in ICU	ANES	RSMD
13.62A	Ventilatory support, in ICU	CARD	ANES
49.73A	Temporary right heart catheter pacemaker	CARD	ANES
49.98B	Pharmacological manipulation of physiological function and recording thereof	CARD	ANES
49.98B	Pharmacological manipulation of physiological function and recording thereof	CARD	CRCM
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CARD	CRCM
50.95A	Insertion of flow directed (Swan Ganz) catheter,	CARD	CRCM
13.62A	Ventilatory support, in ICU	CARD	CVT
13.72A	Cardioversion	CARD	CVT
49.61B	Percutaneous insertion of intra aortic balloon pump to include removal	CARD	CVT
49.7 D	Transvenous pacemaker, permanent	CARD	CVT
49.98B	Pharmacological manipulation of physiological function and recording thereof	CARD	CVT
49.98C	Physical manipulation of physiological function and recording thereof	CARD	CVT
49.98D	Electrical manipulation of physiological function and recording thereof	CARD	CVT
50.94A	Introduction of venous catheter for CVP monitoring	CARD	CVT
50.95A	Insertion of flow directed (Swan Ganz) catheter,	CARD	CVT
DERIVED46	03.05A CARD to 03.03D THOR	CARD	CVT
50.82A	Aortography, Trans-arterial catheter injection	CARD	DIRD
50.83A	Main pulmonary artery or selective arterial injection	CARD	DIRD
50.84A	Superior vena cavography via SVC catheter	CARD	DIRD
50.84B	Angiography of other intrathoracic vessels, Selective arterial injection	CARD	DIRD
50.84C	Angiography of other intrathoracic vessels Selective venous injection	CARD	DIRD
50.87A	Angiography of other intra-abdominal vessels, Selective arterial injection .	CARD	DIRD
50.89A	Peripheral artery, direct arterial injection , unspecified site	CARD	DIRD
13.62A	Ventilatory support, in ICU	CARD	GNSG
49.7 D	Transvenous pacemaker, permanent	CARD	GNSG
50.95A	Insertion of flow directed (Swan Ganz) catheter,	CARD	GNSG
03.41C	Maximal stress electrocardiogram,Continuous, personal physician monitoring	CARD	INMD
03.41D	Intravenous dipyridamole administration for thallium imaging, professional component only	CARD	INMD
03.52B	Electrocardiogram, interpretation	CARD	INMD
13.72A	Cardioversion	CARD	INMD
49.0	Pericardiocentesis	CARD	INMD
49.73A	Temporary right heart catheter pacemaker	CARD	INMD

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CARD	INMD
50.95B	Cardiac output studies	CARD	INMD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CARD	PED
50.94A	Introduction of venous catheter for CVP monitoring	CARD	PED
03.52B	Electrocardiogram, interpretation	CARD	RSMD
13.62A	Ventilatory support, in ICU	CARD	RSMD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CARD	RSMD
DERIVED44	03.05A CARD to 03.03D RSMD	CARD	RSMD
49.98B	Pharmacological manipulation of physiological function and recording thereof	CRCM	CARD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CRCM	CARD
50.95A	Insertion of flow directed (Swan Ganz) catheter,	CRCM	CARD
13.99E	Resuscitation, first hour	CRCM	GNSG
50.94A	Introduction of venous catheter for CVP monitoring	CRCM	GNSG
49.73A	Temporary right heart catheter pacemaker	CRCM	INMD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CRCM	INMD
50.94A	Introduction of venous catheter for CVP monitoring	CRCM	INMD
50.95A	Insertion of flow directed (Swan Ganz) catheter,	CRCM	INMD
50.94A	Introduction of venous catheter for CVP monitoring	CRCM	NUSG
13.99E	Resuscitation, first hour	CRCM	PED
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CRCM	PED
DERIVED56	03.08A CRCM to 08.19G PSYC	CRCM	PSYC
03.05A	Intensive care unit visit per 15 mins	CRCM	RSMD
13.62A	Ventilatory support, in ICU	CRCM	RSMD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CRCM	RSMD
03.05A	Intensive care unit visit per 15 mins	CVT	ANES
03.07B	Repeat consultation	CVT	ANES
46.04A	Tube thoracostomy, That for conditions other than empyema	CVT	ANES
13.62A	Ventilatory support, in ICU	CVT	CARD
13.72A	Cardioversion	CVT	CARD
49.61B	Percutaneous insertion of intra aortic balloon pump to include removal	CVT	CARD
49.7 D	Transvenous pacemaker, permanent	CVT	CARD
49.98B	Pharmacological manipulation of physiological function and recording thereof	CVT	CARD
49.98C	Physical manipulation of physiological function and recording thereof	CVT	CARD
49.98D	Electrical manipulation of physiological function and recording thereof	CVT	CARD
50.94A	Introduction of venous catheter for CVP monitoring	CVT	CARD
50.95A	Insertion of flow directed (Swan Ganz) catheter,	CVT	CARD
DERIVED45	03.03D THOR to 03.05A CARD	CVT	CARD
46.91	Thoracentesis	CVT	DIRD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	CVT	DIRD
50.95A	Insertion of flow directed (Swan Ganz) catheter,	CVT	DIRD
03.05A	Intensive care unit visit per 15 mins	CVT	GNSG
49.7 D	Transvenous pacemaker, permanent	CVT	GNSG
49.82A	Replacement of endocardial electrodes	CVT	GNSG
54.12	Cervical esophagostomy .	CVT	GNSG
54.33B	Total esophagectomy with immediate interposition of hollow viscus	CVT	GNSG
55.99A	Thoraco abdominal esophagogastrectomy	CVT	GNSG
03.08A	Comprehensive consultation	CVT	NUSG
01.09	Other nonoperative bronchoscopy	CVT	PED
50.33B	Resection of upper limb vessels, resection of aneurysm with graft	CVT	VSSG
50.34F	Resection of abdominal aortic aneurysm, straight tube graft	CVT	VSSG
50.34G	Resection of abdominal aortic aneurysm, reconstruction with aortic bi-iliac or aorto-bi-femoral graft	CVT	VSSG
50.34H	Resection of ruptured aortic aneurysm, straight tube graft	CVT	VSSG
50.34J	Resection of ruptured aortic aneurysm, aorto-bi-iliac or bi-femoral graft	CVT	VSSG

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
50.35A	Resection of other thoracic vessels, traumatic injury with graf	CVT	VSSG
50.38A	Resection of lower limb vessels, Traumatic injury with graft	CVT	VSSG
50.38B	Resection of lower limb vessels, Aneurysm with graft	CVT	VSSG
50.58A	Preparation of autogenous saphenous vein for graft	CVT	VSSG
51.27A	Creation of AV fistula	CVT	VSSG
51.29A	Femoral-popliteal bypass	CVT	VSSG
51.29B	Femoral-popliteal, artery bypass vein in-situ	CVT	VSSG
51.29D	Axillo-femoral bypass	CVT	VSSG
51.29E	Femoro-femoral bypass	CVT	VSSG
X245	Peripheral flow study (Doppler), arterial	CVT	VSSG
98.03A	Incision and drainage, abscess, subcutaneous or submucous	DERM	EMSP
51.92A	Varicose vein, visit with single injection	DERM	GNSG
51.92B	Varicose vein, additional injections	DERM	GNSG
98.12A	Excisional biopsy, skin	DERM	GNSG
98.12B	Excisional biopsy, skin of face	DERM	GNSG
98.12C	Removal of sebaceous cyst	DERM	GNSG
98.12H	Excision of soft tissue tumor (subcutaneous) up to 30 minutes of operating time	DERM	GNSG
98.81A	Biopsy, skin	DERM	GNSG
13.53B	Intralesional injection(s) of steroid	DERM	GP
13.59H	Local infiltration of tissue	DERM	GP
17.71A	Local block(s) of somatic nerve(s)	DERM	GP
51.92A	Varicose vein, visit with single injection	DERM	GP
51.92B	Varicose vein, additional injections	DERM	GP
98.12C	Removal of sebaceous cyst	DERM	GP
98.12J	Warts or Keratosis, removal or excision, first lesion	DERM	GP
98.12K	Warts or Keratosis, removal by fulguration, first lesion	DERM	GP
98.12L	Warts or Keratosis, non-surgical treatment (cryotherapy, chemotherapy), first lesior	DERM	GP
98.12S	Condylomata acuminata, non surgical treatment, cryotherapy	DERM	GP
98.12T	Condylomata acuminata,minor, removal by any surgical method	DERM	GP
98.81B	Punch biopsy, skin	DERM	GP
22.11A	Excision of benign tumor of lid	DERM	OPHT
22.13A	Excision of simple lesion(s) eyelid	DERM	OPHT
33.3 A	Rhinophyma	DERM	OTOL
39.21A	Biopsy of palate	DERM	OTOL
98.12B	Excisional biopsy, skin of face	DERM	OTOL
98.5 A	Rotation or transposition flap	DERM	OTOL
98.6 E	Leukoplakia vermilionectomy and wedge resection	DERM	OTOL
17.71A	Local block(s) of somatic nerve(s)	DERM	PLAS
33.22B	Mucosal biopsy, intranasal	DERM	PLAS
98.12G	Laser treatment of cutaneous vascular tumors	DERM	PLAS
76.1 A	Laser therapy of lesion(s) of penis	DERM	UROL
16.89A	Injection for discogram	DIRD	ANES
18.22B	Caeliac plexus ganglion block, with sclerosing agents (alcohol or phenol)	DIRD	ANES
18.29A	Chemical sympathectomy under fluoroscopic or CT control	DIRD	ANES
50.94A	Introduction of venous catheter for CVP monitoring	DIRD	ANES
93.91B	Joint aspiration, injection, other joints	DIRD	ANES
50.82A	Aortography, Trans-arterial catheter injection	DIRD	CARD
50.83A	Main pulmonary artery or selective arterial injection	DIRD	CARD

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
50.84A	Superior vena cavography via SVC catheter	DIRD	CARD
50.84B	Angiography of other intrathoracic vessels, Selective arterial injection	DIRD	CARD
50.84C	Angiography of other intrathoracic vessels Selective venous injection	DIRD	CARD
50.87A	Angiography of other intra-abdominal vessels, Selective arterial injection .	DIRD	CARD
50.89A	Peripheral artery, direct arterial injection , unspecified site	DIRD	CARD
46.91	Thoracentesis	DIRD	CVT
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	DIRD	CVT
50.95A	Insertion of flow directed (Swan Ganz) catheter,	DIRD	CVT
62.81A	Percutaneous, needle biopsy of liver	DIRD	GAST
63.96B	Percutaneous trans-hepatic cholangiography	DIRD	GAST
66.91A	Paracentesis	DIRD	GAST
19.81	Percutaneous (needle) biopsy of thyroid	DIRD	GNSG
46.04A	Tube thoracostomy, That for conditions other than empyema	DIRD	GNSG
46.04B	Tube thoracostomy, That for empyema	DIRD	GNSG
50.94A	Introduction of venous catheter for CVP monitoring	DIRD	GNSG
50.99B	Insertion of long dwelling intravascular catheter	DIRD	GNSG
97.81	Percutaneous (needle) biopsy of breast	DIRD	GNSG
46.91	Thoracentesis	DIRD	GP
66.91A	Paracentesis	DIRD	GP
93.91A	Joint aspiration, injection, hip	DIRD	GP
95.81A	Biopsy of muscle	DIRD	GP
46.91	Thoracentesis	DIRD	INMD
50.94A	Introduction of venous catheter for CVP monitoring	DIRD	INMD
50.99B	Insertion of long dwelling intravascular catheter	DIRD	INMD
62.81A	Percutaneous, needle biopsy of liver	DIRD	INMD
66.91A	Paracentesis	DIRD	INMD
67.81	Percutaneous biopsy of kidney	DIRD	INMD
93.91B	Joint aspiration, injection, other joints	DIRD	INMD
69.83A	Cystogram and cystourethrogram, voiding	DIRD	UROL
72.91	Needle biopsy of prostate	DIRD	UROL
X235	Echography, scan B-mode, pregnancy diagnosis	DIRDX	OBGY
X236	Fetal age determination (biparietal diameter)	DIRDX	OBGY
X237	Fetal growth rate (series of X-236)	DIRDX	OBGY
X238	Placenta localization	DIRDX	OBGY
X239	Pregnancy, complete (X-235, X-236 and X-238 combined)	DIRDX	OBGY
X239A	Complete, real-time ultrasound scan for complete detailed prenatal fetal evaluation	DIRDX	OBGY
X240	Molar pregnancy diagnosis	DIRDX	OBGY
X241	Ectopic pregnancy diagnosis	DIRDX	OBGY
X243	Pelvic mass diagnosis	DIRDX	OBGY
X258	Transvaginal ultrasound,	DIRDX	OBGY
X258A	Transvaginal ultrasound in addition to pelvic ultrasound	DIRDX	OBGY
03.03A	Visit not requiring complete history and evaluation	E/M	IDIS
03.03F	Repeat office visit - referral cases only	E/M	IDIS
03.04A	Comprehensive visit	E/M	IDIS
03.07A	Minor consultation	E/M	IDIS
03.07B	Repeat consultation	E/M	IDIS
03.08A	Comprehensive consultation	E/M	IDIS
03.03A	Visit not requiring complete history and evaluation	E/M	INMD
03.03D	Hospital visits	E/M	INMD
03.03F	Repeat office visit - referral cases only	E/M	INMD
03.04A	Comprehensive visit	E/M	INMD
03.07A	Minor consultation	E/M	INMD
03.07B	Repeat consultation	E/M	INMD

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
03.08A	Comprehensive consultation	E/M	INMD
19.81	Percutaneous (needle) biopsy of thyroid	E/M	OTOL
03.03D	Hospital visits	E/M	RSMD
03.03F	Repeat office visit - referral cases only	E/M	RSMD
03.08A	Comprehensive consultation	E/M	RSMD
98.03A	Incision and drainage, abscess, subcutaneous or submucous	EMSP	DERM
43.1 B	Emergency cricothyroidotomy	EMSP	GNSG
46.04A	Tube thoracostomy, That for conditions other than empyema	EMSP	GNSG
98.22A	Laceration, face, up to 2.5 cms (1 unit) or body, up to 5 cms (1 unit	EMSP	GNSG
98.22B	Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit	EMSP	GNSG
01.03	Direct laryngoscopy	EMSP	GP
08.12A	Certification under the Mental Health Act	EMSP	GP
08.19G	Direct contact with an individual patient for psychiatric treatment (including medical psychotherapy a	EMSP	GP
12.03	Removal of Intraluminal foreign body from larynx without incision	EMSP	GP
13.72A	Cardioversion	EMSP	GP
16.81A	For diagnosis or imaging studies, spinal tap	EMSP	GP
33.01A	Control of epistaxis by anterior nasal packing And/or cautery	EMSP	GP
91.00A	CR fracture, humerus, Surgical neck	EMSP	GP
91.00C	CR fracture, humerus, Shaft	EMSP	GP
91.00D	CR fracture, humerus, Supracondylar	EMSP	GP
91.00F	CR fracture, Elbow, one or more bones	EMSP	GP
91.01A	CR fracture, Radius head, not requiring anaesthesia	EMSP	GP
91.01C	CR fracture, Radius, shaft	EMSP	GP
91.01D	CR fracture, Ulna, shaft	EMSP	GP
91.01F	CR fracture, Colles	EMSP	GP
91.01H	CR fracture, Styloid process radius	EMSP	GP
91.01J	CR fracture, Styloid, ulna	EMSP	GP
91.01K	CR fracture, Undisplaced, radius/ulna	EMSP	GP
91.01L	CR fracture, Greenstick	EMSP	GP
91.01M	CR fracture, Displaced radius/ulna	EMSP	GP
91.02A	CR fracture, Metacarpal	EMSP	GP
91.02D	CR fracture, Scaphoid	EMSP	GP
91.03A	CR fracture, Phalanx	EMSP	GP
91.03B	CR fracture, Simple distal phalanx	EMSP	GP
91.04C	CR fracture, Shaft, femur	EMSP	GP
91.05B	CR fracture, Tibia, shaft, with or without fibula	EMSP	GP
91.05C	CR fracture, Medial malleolus, without displacement of astragalus	EMSP	GP
91.05D	CR fracture, Medial or lateral malleolus with displacement of astragalus	EMSP	GP
91.05E	CR fracture, Fibula, shaft	EMSP	GP
91.05F	CR fracture, Ankle, bi-malleolar	EMSP	GP
91.05G	CR fracture, Ankle, tri-malleolar	EMSP	GP
91.05H	CR fracture, Lateral malleolus	EMSP	GP
91.06A	CR fracture, Talus	EMSP	GP
91.06B	CR fracture, Calcaneus	EMSP	GP
91.06D	CR fracture, Metatarsal	EMSP	GP
91.06E	CR fracture, Other tarsal bone(s)	EMSP	GP
91.08A	CR fracture, Clavicle	EMSP	GP
91.08H	CR fracture, Patella	EMSP	GP
91.70A	CR of dislocation, Shoulder, Primary	EMSP	GP
91.78B	Closed reduction of dislocation of Acromio-clavicular	EMSP	GP
96.2 A	Revision of amputation stump, Finger	EMSP	GP
98.22B	Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit	EMSP	GP
13.72A	Cardioversion	EMSP	INMD

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
13.99E	Resuscitation, first hour	EMSP	INMD
22.5 A	Simple suture, eyelid	EMSP	OPHT
91.00C	CR fracture, humerus, Shaft	EMSP	ORTH
91.70A	CR of dislocation, Shoulder, Primary	EMSP	ORTH
91.71	Closed reduction of dislocation of elbow	EMSP	ORTH
13.99H	Critical care of severely ill or injured patient in a hospital emergency department requiring major trea	EMSP	PED
98.22A	Laceration, face, up to 2.5 cms (1 unit) or body, up to 5 cms (1 unit	EMSP	PED
98.22B	Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit	EMSP	PED
62.81A	Percutaneous, needle biopsy of liver	GAST	DIRD
63.96B	Percutaneous trans-hepatic cholangiography	GAST	DIRD
66.91A	Paracentesis	GAST	DIRD
01.14	Other nonoperative Esophagogastroscopy/gastroscopy	GAST	GNSG
01.22	Other nonoperative colonoscopy	GAST	GNSG
01.24B	Flexible proctosigmoidoscopy	GAST	GNSG
11.02	Replacement of gastrostomy tube	GAST	GNSG
12.12B	Removal of Intraluminal foreign body from esophagus, Via flexible esophagogastroscopy	GAST	GNSG
55.1 B	Percutaneous endoscopic gastrostomy	GAST	GNSG
57.13A	Endoscopic bipolar electrocoagulation/heater probe haemostasis	GAST	GNSG
57.92A	Crosby capsule, jejunal biopsy, > 13 years	GAST	GNSG
58.99B	Decompression of sigmoid volvulus (trans-rectal)	GAST	GNSG
60.82B	Rectal biopsy with flexible sigmoidoscope	GAST	GNSG
64.97A	Endoscopic retrograde cholangiopancreatography (ERCP)	GAST	GNSG
01.24A	Rigid proctosigmoidoscopy	GAST	INMD
01.24B	Flexible proctosigmoidoscopy	GAST	INMD
11.02	Replacement of gastrostomy tube	GAST	INMD
54.91A	Injection or ligation of esophageal varices ,Sclerotherapy	GAST	INMD
54.91C	Banding of esophageal varices ,	GAST	INMD
54.92B	Dilation by sound or bougie, without endoscopy	GAST	INMD
56.34A	Endoscopic control of gastric or duodenal bleeding with electrocautery or injection haemostasis .	GAST	INMD
57.21B	Endoscopic, large intestine Injection haemostasis	GAST	INMD
60.24A	Rectal polyp	GAST	INMD
60.82B	Rectal biopsy with flexible sigmoidoscope	GAST	INMD
62.81A	Percutaneous, needle biopsy of liver	GAST	INMD
64.97A	Endoscopic retrograde cholangiopancreatography (ERCP)	GAST	INMD
66.91A	Paracentesis	GAST	INMD
03.05A	Intensive care unit visit per 15 mins	GNSG	ANES
46.04B	Tube thoracostomy, That for empyema	GNSG	ANES
50.94A	Introduction of venous catheter for CVP monitoring	GNSG	ANES
13.62A	Ventilatory support, in ICU	GNSG	CARD
49.7 D	Transvenous pacemaker, permanent	GNSG	CARD
50.95A	Insertion of flow directed (Swan Ganz) catheter,	GNSG	CARD
13.99E	Resuscitation, first hour	GNSG	CRCM
50.94A	Introduction of venous catheter for CVP monitoring	GNSG	CRCM
03.05A	Intensive care unit visit per 15 mins	GNSG	CVT
49.7 D	Transvenous pacemaker, permanent	GNSG	CVT
49.82A	Replacement of endocardial electrodes	GNSG	CVT

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
54.12	Cervical esophagostomy .	GNSG	CVT
54.33B	Total esophagectomy with immediate interposition of hollow viscus	GNSG	CVT
55.99A	Thoraco abdominal esophagogastrectomy	GNSG	CVT
51.92A	Varicose vein, visit with single injection	GNSG	DERM
51.92B	Varicose vein, additional injections	GNSG	DERM
98.12A	Excisional biopsy, skin	GNSG	DERM
98.12B	Excisional biopsy, skin of face	GNSG	DERM
98.12C	Removal of sebaceous cyst	GNSG	DERM
98.12H	Excision of soft tissue tumor (subcutaneous) up to 30 minutes of operating time	GNSG	DERM
98.81A	Biopsy, skin	GNSG	DERM
19.81	Percutaneous (needle) biopsy of thyroid	GNSG	DIRD
46.04A	Tube thoracostomy, That for conditions other than empyema	GNSG	DIRD
46.04B	Tube thoracostomy, That for empyema	GNSG	DIRD
50.94A	Introduction of venous catheter for CVP monitoring	GNSG	DIRD
50.99B	Insertion of long dwelling intravascular catheter	GNSG	DIRD
97.81	Percutaneous (needle) biopsy of breast	GNSG	DIRD
43.1 B	Emergency cricothyroidotomy	GNSG	EMSP
46.04A	Tube thoracostomy, That for conditions other than empyema	GNSG	EMSP
98.22A	Laceration, face, up to 2.5 cms (1 unit) or body, up to 5 cms (1 unit	GNSG	EMSP
98.22B	Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit)	GNSG	EMSP
01.14	Other nonoperative Esophagogastroscopy/gastroscopy	GNSG	GAST
01.22	Other nonoperative colonoscopy	GNSG	GAST
01.24B	Flexible proctosigmoidoscopy	GNSG	GAST
11.02	Replacement of gastrostomy tube	GNSG	GAST
12.12B	Removal of Intraluminal foreign body from esophagus, Via flexible esophagogastroscopy	GNSG	GAST
55.1 B	Percutaneous endoscopic gastrostomy	GNSG	GAST
57.13A	Endoscopic bipolar electrocoagulation/heater probe haemostasis	GNSG	GAST
57.92A	Crosby capsule, jejunal biopsy	GNSG	GAST
58.99B	Decompression of sigmoid volvulus (trans-rectal)	GNSG	GAST
60.82B	Rectal biopsy with flexible sigmoidoscope	GNSG	GAST
64.97A	Endoscopic retrograde cholangiopancreatography (ERCP)	GNSG	GAST
01.24A	Rigid proctosigmoidoscopy	GNSG	GP
01.24B	Flexible proctosigmoidoscopy	GNSG	GP
10.23	Dilation of anal sphincter	GNSG	GP
40.1	Tonsillectomy without adenoidectomy	GNSG	GP
40.2	Tonsillectomy with adenoidectomy	GNSG	GP
46.04A	Tube thoracostomy, That for conditions other than empyema	GNSG	GP
46.04B	Tube thoracostomy, That for empyema	GNSG	GP
50.4 B	Ligation and stripping of long saphenous vein	GNSG	GP
51.92A	Varicose vein, visit with single injection	GNSG	GP
51.92B	Varicose vein, additional injections	GNSG	GP
59.0	Appendectomy	GNSG	GP
60.82A	Rectal biopsy with rigid sigmoidoscope	GNSG	GP
60.82B	Rectal biopsy with flexible sigmoidoscope	GNSG	GP
61.01A	Incision and drainage, ano-rectal abscess	GNSG	GP
61.03	Excision of perianal skin tags	GNSG	GP
61.29A	Simple anal polyp	GNSG	GP
61.32A	Submucosal injection, haemorrhoid	GNSG	GP
61.37A	Incision or excision of thrombosed hemorrhoids	GNSG	GP
75.64	Vasectomy (complete) (partial)	GNSG	GP

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
76.0	Circumcision	GNSG	GP
94.21A	Excision, Ganglion of hand	GNSG	GP
97.81	Percutaneous (needle) biopsy of breast	GNSG	GP
98.03A	Incision and drainage, abscess, subcutaneous or submucous	GNSG	GP
98.11A	Debridement of wound or infected tissue, up to 32 sq cms	GNSG	GP
98.12A	Excisional biopsy, skin	GNSG	GP
98.12B	Excisional biopsy, skin of face	GNSG	GP
98.12H	Excision of soft tissue tumor (subcutaneous) up to 30 minutes of operating time	GNSG	GP
98.22A	Laceration, face, up to 2.5 cms (1 unit) or body, up to 5 cms (1 unit	GNSG	GP
98.22B	Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit)	GNSG	GP
98.96A	Removal of nail, nailbed, or nailfold wedge excision	GNSG	GP
98.96B	Removal of nail, nailbed, or nailfold, radical excision	GNSG	GP
01.24B	Flexible proctosigmoidoscopy	GNSG	INMD
11.02	Replacement of gastrostomy tube	GNSG	INMD
12.12B	Removal of Intraluminal foreign body from esophagus, Via flexible esophagogastroscopy	GNSG	INMD
50.94A	Introduction of venous catheter for CVP monitoring	GNSG	INMD
50.95A	Insertion of flow directed (Swan Ganz) catheter,	GNSG	INMD
50.99B	Insertion of long dwelling intravascular catheter	GNSG	INMD
54.92C	Dilation by sound or bougie, via rigid esophagoscopy, initial	GNSG	INMD
60.82B	Rectal biopsy with flexible sigmoidoscope	GNSG	INMD
64.97A	Endoscopic retrograde cholangiopancreatography (ERCP)	GNSG	INMD
13.62A	Ventilatory support, in ICU	GNSG	NUSG
50.94A	Introduction of venous catheter for CVP monitoring	GNSG	NUSG
66.19A	Other laparotomy	GNSG	OBGY
66.3 B	Retroperitoneal tumor, excision	GNSG	OBGY
66.83	Laparoscopy, diagnostic, with or without biopsy	GNSG	OBGY
03.03F	Repeat office visit - referral cases only	GNSG	ORTH
03.03G	Reassessment of a referred in-patient	GNSG	ORTH
03.04A	Comprehensive visit	GNSG	ORTH
03.07A	Minor consultation	GNSG	ORTH
03.07B	Repeat consultation	GNSG	ORTH
17.33	Release of carpal tunnel	GNSG	ORTH
94.21A	Excision, Ganglion of hand	GNSG	ORTH
98.11B	Debridement of wound or infected tissue, over 32 and up to 64 sq cms	GNSG	ORTH
12.12A	Removal of Intraluminal foreign body from esophagus, Via rigid esophagoscopy	GNSG	OTOL
19.6 A	Thyroglossal duct excision	GNSG	OTOL
19.6 B	Recurrent thyroglossal duct excision	GNSG	OTOL
37.91A	Release of simple tongue tie, clipping	GNSG	OTOL
37.91B	Release of complex tongue tie, that requiring Z plasty closure	GNSG	OTOL
38.0 A	Removal salivary gland calculus	GNSG	OTOL
38.21A	Sialoadenectomy, Submandibular gland	GNSG	OTOL
38.22A	Parotidectomy, Subtotal with preservation of facial nerve	GNSG	OTOL
38.22B	Parotidectomy, Subtotal repeat with preservation of facial nerve	GNSG	OTOL
38.23A	Total Parotidectomy, with preservation of facial nerve	GNSG	OTOL
38.23B	Total Parotidectomy, without preservation of facial nerve	GNSG	OTOL
40.1	Tonsillectomy without adenoidectomy	GNSG	OTOL
40.2	Tonsillectomy with adenoidectomy	GNSG	OTOL
41.1	Excision of branchial cleft cyst or vestiges	GNSG	OTOL
41.21	Cricopharyngeal myotomy	GNSG	OTOL
41.42	Closure of branchial cleft fistula	GNSG	OTOL

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
43.1 A	Tracheostomy	GNSG	OTOL
52.0 A	Drainage, deep cervical abscess	GNSG	OTOL
52.1 A	Biopsy, superficial lymph node	GNSG	OTOL
52.12	Excision of internal mammary lymph node	GNSG	OTOL
52.31A	Radical neck dissection, Limited (suprahyoid)	GNSG	OTOL
52.32	Radical neck dissection Complete, unilateral	GNSG	OTOL
54.09A	Esophagotomy for removal of foreign body, cervical	GNSG	OTOL
54.12	Cervical esophagostomy .	GNSG	OTOL
54.21A	Biopsy of esophagus via rigid esophagoscopy	GNSG	OTOL
54.6	Esophagomyotomy	GNSG	OTOL
54.92C	Dilation by sound or bougie, via rigid esophagoscopy, initial	GNSG	OTOL
03.02A	Abbreviated assessment of a patient's condition	GNSG	PLAS
03.03A	Visit not requiring complete history and evaluation	GNSG	PLAS
03.04A	Comprehensive visit	GNSG	PLAS
03.07A	Minor consultation	GNSG	PLAS
17.33	Release of carpal tunnel	GNSG	PLAS
37.91B	Release of complex tongue tie, that requiring Z plasty closure	GNSG	PLAS
41.1	Excision of branchial cleft cyst or vestiges	GNSG	PLAS
43.1 A	Tracheostomy	GNSG	PLAS
95.09A	Removal of deep foreign body, with or without imaging, first 15 minutes of operating time	GNSG	PLAS
97.29A	Simple mastectomy	GNSG	PLAS
98.12A	Excisional biopsy, skin	GNSG	PLAS
98.12B	Excisional biopsy, skin of face	GNSG	PLAS
98.12C	Removal of sebaceous cyst	GNSG	PLAS
98.12D	Bilateral excision, apocrine glands, major	GNSG	PLAS
98.12E	Bilateral excision, apocrine glands, minor	GNSG	PLAS
98.12H	Excision of soft tissue tumor (subcutaneous) up to 30 minutes of operating time	GNSG	PLAS
20.12	Unilateral adrenalectomy	GNSG	UROL
73.1 B	Repair of communicating hydrocele	GNSG	UROL
74.2 A	Unilateral orchiectomy	GNSG	UROL
74.4 D	Testicular fixation	GNSG	UROL
75.64	Vasectomy (complete) (partial)	GNSG	UROL
76.0	Circumcision	GNSG	UROL
13.53B	Intralesional injection(s) of steroid	GP	DERM
13.59H	Local infiltration of tissue	GP	DERM
17.71A	Local block(s) of somatic nerve(s)	GP	DERM
51.92A	Varicose vein, visit with single injection	GP	DERM
51.92B	Varicose vein, additional injections	GP	DERM
98.12C	Removal of sebaceous cyst	GP	DERM
98.12J	Warts or Keratosis, removal or excision, first lesion	GP	DERM
98.12K	Warts or Keratosis, removal by fulguration, first lesion	GP	DERM
98.12L	Warts or Keratosis, non-surgical treatment (cryotherapy, chemotherapy), first lesior	GP	DERM
98.12S	Condylomata acuminata, non surgical treatment, cryotherapy	GP	DERM
98.12T	Condylomata acuminata,minor, removal by any surgical method	GP	DERM
98.81B	Punch biopsy, skin	GP	DERM
46.91	Thoracentesis	GP	DIRD
66.91A	Paracentesis	GP	DIRD
93.91A	Joint aspiration, injection, hip	GP	DIRD
95.81A	Biopsy of muscle	GP	DIRD
01.03	Direct laryngoscopy	GP	EMSP

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
08.12A	Certification under the Mental Health Act	GP	EMSP
08.19G	Direct contact with an individual patient for psychiatric treatment (including medical psychotherapy a	GP	EMSP
12.03	Removal of Intraluminal foreign body from larynx without incision	GP	EMSP
13.72A	Cardioversion	GP	EMSP
16.81A	For diagnosis or imaging studies, spinal tap	GP	EMSP
33.01A	Control of epistaxis by anterior nasal packing And/or cautery	GP	EMSP
91.00A	CR fracture, humerus, Surgical neck	GP	EMSP
91.00C	CR fracture, humerus, Shaft	GP	EMSP
91.00D	CR fracture, humerus, Supracondylar	GP	EMSP
91.00F	CR fracture, Elbow, one or more bones	GP	EMSP
91.01A	CR fracture, Radius head, not requiring anaesthesia	GP	EMSP
91.01C	CR fracture, Radius, shaft	GP	EMSP
91.01D	CR fracture, Ulna, shaft	GP	EMSP
91.01F	CR fracture, Colles	GP	EMSP
91.01H	CR fracture, Styloid process radius	GP	EMSP
91.01J	CR fracture, Styloid, ulna	GP	EMSP
91.01K	CR fracture, Undisplaced, radius/ulna	GP	EMSP
91.01L	CR fracture, Greenstick	GP	EMSP
91.01M	CR fracture, Displaced, radius/ulna	GP	EMSP
91.02A	CR fracture, Metacarpal	GP	EMSP
91.02D	CR fracture, Scaphoid	GP	EMSP
91.03A	CR fracture, Phalanx	GP	EMSP
91.03B	CR fracture, Simple distal phalanx	GP	EMSP
91.04C	CR fracture, Shaft	GP	EMSP
91.05B	CR fracture, Tibia, shaft, with or without fibula	GP	EMSP
91.05C	CR fracture, Medial malleolus, without displacement of astragalus	GP	EMSP
91.05D	CR fracture, Medial or lateral malleolus with displacement of astragalus	GP	EMSP
91.05E	CR fracture, Fibula, shaft	GP	EMSP
91.05F	CR fracture, Ankle, bi-malleolar	GP	EMSP
91.05G	CR fracture, Ankle, tri-malleolar	GP	EMSP
91.05H	CR fracture, Lateral malleolus	GP	EMSP
91.06A	CR fracture, Talus	GP	EMSP
91.06B	CR fracture, Calcaneus	GP	EMSP
91.06D	CR fracture, Metatarsal	GP	EMSP
91.06E	CR fracture, Other tarsal bone(s)	GP	EMSP
91.08A	CR fracture, Clavicle	GP	EMSP
91.08H	CR fracture, Patella	GP	EMSP
91.70A	CR of dislocation, Shoulder, Primary	GP	EMSP
91.78B	Closed reduction of dislocation of Acromio-clavicular	GP	EMSP
96.2 A	Revision of amputation stump, Finger	GP	EMSP
98.22B	Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit)	GP	EMSP
01.24A	Rigid proctosigmoidoscopy	GP	GNSG
01.24B	Flexible proctosigmoidoscopy	GP	GNSG
10.23	Dilation of anal sphincter	GP	GNSG
40.1	Tonsillectomy without adenoidectomy	GP	GNSG
40.2	Tonsillectomy with adenoidectomy	GP	GNSG
46.04A	Tube thoracostomy, That for conditions other than empyema	GP	GNSG
46.04B	Tube thoracostomy, That for empyema	GP	GNSG
50.4 B	Ligation and stripping of long saphenous vein	GP	GNSG
51.92A	Varicose vein, visit with single injection	GP	GNSG

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
51.92B	Varicose vein, additional injections	GP	GNSG
59.0	Appendectomy	GP	GNSG
60.82A	Rectal biopsy with rigid sigmoidoscope	GP	GNSG
60.82B	Rectal biopsy with flexible sigmoidoscope	GP	GNSG
61.01A	Incision and drainage, ano-rectal abscess	GP	GNSG
61.03	Excision of perianal skin tags	GP	GNSG
61.29A	Excision of simple anal polyp	GP	GNSG
61.32A	Submucosal injection, haemorrhoid	GP	GNSG
61.37A	Incision or excision of thrombosed hemorrhoids	GP	GNSG
75.64	Vasectomy (complete) (partial)	GP	GNSG
76.0	Circumcision	GP	GNSG
94.21A	Excision, Ganglion of hand	GP	GNSG
97.81	Percutaneous (needle) biopsy of breast	GP	GNSG
98.03A	Incision and drainage, abscess, subcutaneous or submucous	GP	GNSG
98.11A	Debridement of wound or infected tissue, up to 32 sq cms	GP	GNSG
98.12A	Excisional biopsy, skin	GP	GNSG
98.12B	Excisional biopsy, skin of face	GP	GNSG
98.12H	Excision of soft tissue tumor (subcutaneous) up to 30 minutes of operating time	GP	GNSG
98.22A	Laceration, face, up to 2.5 cms (1 unit) or body, up to 5 cms (1 unit	GP	GNSG
98.22B	Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit)	GP	GNSG
98.96A	Removal of nail, nailbed, or nailfold wedge excision	GP	GNSG
98.96B	Removal of nail, nailbed, or nailfold, radical excision	GP	GNSG
01.24B	Flexible proctosigmoidoscopy	GP	INMD
03.37A	Vital capacity	GP	INMD
03.38D	Vitalometry - alone	GP	INMD
03.38E	Vitalometry, before and after bronchodilators	GP	INMD
13.01A	Replacement transfusion	GP	INMD
13.42A	Desensitization treatments with autogenous vaccines	GP	INMD
13.59A	Intramuscular or subcutaneous injections	GP	INMD
46.91	Thoracentesis	GP	INMD
50.99D	Phlebotomy	GP	INMD
60.24A	Excision of rectal polyp	GP	INMD
60.82B	Rectal biopsy with flexible sigmoidoscope	GP	INMD
66.91A	Paracentesis	GP	INMD
93.91B	Joint aspiration, injection, other joints	GP	INMD
95.93	Injection/aspiration of therapeutic substance into bursa, subacromial	GP	INMD
98.89E	Skin test, airborne allergens, intradermal or prick, per test	GP	INMD
98.89F	Skin test, food allergens, intradermal or prick, per test	GP	INMD
12.23	Removal of intraluminal foreign body from vagina without incision	GP	OBGY
81.01A	Incomplete abortion (D & C) up to and including 12 weeks	GP	OBGY
81.09	Other dilation and curettage	GP	OBGY
81.8	Insertion of intra-uterine contraceptive device	GP	OBGY
83.09A	Perineal abscess, I & D, marsupialization	GP	OBGY
83.12	Incision of Bartholin's gland (cyst)	GP	OBGY
86.0	Classical cesarean section	GP	OBGY
87.52	Insertion of scalp electrodes	GP	OBGY
87.6	Removal of retained placenta	GP	OBGY
87.98A	Vaginal delivery	GP	OBGY
91.00C	CR fracture, humerus, Shaft	GP	ORTH
91.74A	Closed reduction of dislocation of hip	GP	ORTH

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
93.91B	Joint aspiration, injection, other joints	GP	ORTH
95.93	Injection/aspiration of therapeutic substance into bursa, subacromial	GP	ORTH
13.42A	Desensitization treatments with autogenous vaccines	GP	OTOL
40.1	Tonsillectomy without adenoidectomy	GP	OTOL
40.2	Tonsillectomy with adenoidectomy	GP	OTOL
98.89E	Skin test, airborne allergens, intradermal or prick, per test	GP	OTOL
98.89F	Skin test, food allergens, intradermal or prick, per test	GP	OTOL
13.59A	Intramuscular or subcutaneous injections	GP	PED
98.89E	Skin test, airborne allergens, intradermal or prick, per test	GP	PED
98.89F	Skin test, food allergens, intradermal or prick, per test	GP	PED
08.12A	Certification under the Mental Health Act	GP	PSYC
DERIVED50	03.05I GP to 08.19G PSYC	GP	PSYC
75.64	Vasectomy (complete) (partial)	GP	UROL
76.0	Circumcision	GP	UROL
03.03A	Visit not requiring complete history and evaluation	IDIS	E/M
03.03F	Repeat office visit - referral cases only	IDIS	E/M
03.04A	Comprehensive visit	IDIS	E/M
03.07A	Minor consultation	IDIS	E/M
03.07B	Repeat consultation	IDIS	E/M
03.08A	Comprehensive consultation	IDIS	E/M
03.03A	Visit not requiring complete history and evaluation	IDIS	INMD
03.03D	Hospital visits	IDIS	INMD
03.03F	Repeat office visit - referral cases only	IDIS	INMD
03.04C	Hospital admission	IDIS	INMD
03.05A	Intensive care unit visit per 15 mins	IDIS	INMD
03.07A	Minor consultation	IDIS	INMD
03.07B	Repeat consultation	IDIS	INMD
03.08A	Comprehensive consultation	IDIS	INMD
03.03A	Visit not requiring complete history and evaluation	IDIS	NEPH
03.03D	Hospital visits	IDIS	NEPH
03.05A	Intensive care unit visit per 15 mins	IDIS	NEPH
03.07A	Minor consultation	IDIS	NEPH
03.03F	Repeat office visit - referral cases only	IDIS	NEUR
03.07A	Minor consultation	IDIS	NEUR
03.03A	Visit not requiring complete history and evaluation	IDIS	RSMD
03.03D	Hospital visits	IDIS	RSMD
03.03F	Repeat office visit - referral cases only	IDIS	RSMD
03.04A	Comprehensive visit	IDIS	RSMD
03.07B	Repeat consultation	IDIS	RSMD
03.08A	Comprehensive consultation	IDIS	RSMD
03.41C	Maximal stress electrocardiogram,Continuous, personal physician monitoring	INMD	CARD
03.41D	Intravenous dipyridamole administration for thallium imaging, professional component only	INMD	CARD
03.52B	Electrocardiogram, interpretation	INMD	CARD
13.72A	Cardioversion	INMD	CARD
49.0	Pericardiocentesis	INMD	CARD
49.73A	Temporary right heart catheter pacemaker	INMD	CARD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	INMD	CARD
50.95B	Cardiac output studies	INMD	CARD
49.73A	Temporary right heart catheter pacemaker	INMD	CRCM
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	INMD	CRCM
50.94A	Introduction of venous catheter for CVP monitoring	INMD	CRCM

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
50.95A	Insertion of flow directed (Swan Ganz) catheter,	INMD	CRCM
46.91	Thoracentesis	INMD	DIRD
50.94A	Introduction of venous catheter for CVP monitoring	INMD	DIRD
50.99B	Insertion of long dwelling intravascular catheter	INMD	DIRD
62.81A	Percutaneous, needle biopsy of liver	INMD	DIRD
66.91A	Paracentesis	INMD	DIRD
67.81	Percutaneous biopsy of kidney	INMD	DIRD
93.91B	Joint aspiration, injection, other joints	INMD	DIRD
03.03A	Visit not requiring complete history and evaluation	INMD	E/M
03.03D	Hospital visits	INMD	E/M
03.03F	Repeat office visit - referral cases only	INMD	E/M
03.04A	Comprehensive visit	INMD	E/M
03.07A	Minor consultation	INMD	E/M
03.07B	Repeat consultation	INMD	E/M
03.08A	Comprehensive consultation	INMD	E/M
13.72A	Cardioversion	INMD	EMSP
13.99E	Resuscitation, first hour	INMD	EMSP
01.24A	Rigid proctosigmoidoscopy	INMD	GAST
01.24B	Flexible proctosigmoidoscopy	INMD	GAST
11.02	Replacement of gastrostomy tube	INMD	GAST
54.91A	Injection or ligation of esophageal varices, Sclerotherapy	INMD	GAST
54.91C	Banding of esophageal varices,	INMD	GAST
54.92B	Dilation by sound or bougie, without endoscopy	INMD	GAST
56.34A	Endoscopic control of gastric or duodenal bleeding with electrocautery or injection haemostasis .	INMD	GAST
57.21B	Endoscopic, large intestine Injection haemostasis	INMD	GAST
60.24A	Excision of rectal polyp	INMD	GAST
60.82B	Rectal biopsy with flexible sigmoidoscope	INMD	GAST
62.81A	Percutaneous, needle biopsy of liver	INMD	GAST
64.97A	Endoscopic retrograde cholangiopancreatography (ERCP)	INMD	GAST
66.91A	Paracentesis	INMD	GAST
01.24B	Flexible proctosigmoidoscopy	INMD	GNSG
11.02	Replacement of gastrostomy tube	INMD	GNSG
12.12B	Removal of Intraluminal foreign body from esophagus, Via flexible esophagogastroscopy	INMD	GNSG
50.94A	Introduction of venous catheter for CVP monitoring	INMD	GNSG
50.95A	Insertion of flow directed (Swan Ganz) catheter,	INMD	GNSG
50.99B	Insertion of long dwelling intravascular catheter	INMD	GNSG
54.92C	Dilation by sound or bougie, via rigid esophagoscopy, initial	INMD	GNSG
60.82B	Rectal biopsy with flexible sigmoidoscope	INMD	GNSG
64.97A	Endoscopic retrograde cholangiopancreatography (ERCP)	INMD	GNSG
01.24B	Flexible proctosigmoidoscopy	INMD	GP
03.37A	Vital capacity	INMD	GP
03.38D	Vitalometry - alone	INMD	GP
03.38E	Vitalometry, before and after bronchodilators	INMD	GP
13.01A	Replacement transfusion	INMD	GP
13.42A	Desensitization treatments with autogenous vaccines	INMD	GP
13.59A	Intramuscular or subcutaneous injections	INMD	GP
46.91	Thoracentesis	INMD	GP
50.99D	Phlebotomy	INMD	GP
60.24A	Excision of rectal polyp	INMD	GP
60.82B	Rectal biopsy with flexible sigmoidoscope	INMD	GP

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
66.91A	Paracentesis	INMD	GP
93.91B	Joint aspiration, injection, other joints	INMD	GP
95.93	Injection/aspiration of therapeutic substance into bursa, subacromial	INMD	GP
98.89E	Skin test, airborne allergens, intradermal or prick, per test	INMD	GP
98.89F	Skin test, food allergens, intradermal or prick, per test	INMD	GP
03.03A	Visit not requiring complete history and evaluation	INMD	IDIS
03.03D	Hospital visits	INMD	IDIS
03.03F	Repeat office visit - referral cases only	INMD	IDIS
03.04C	Hospital admission	INMD	IDIS
03.05A	Intensive care unit visit per 15 mins	INMD	IDIS
03.07A	Minor consultation	INMD	IDIS
03.07B	Repeat consultation	INMD	IDIS
03.08A	Comprehensive consultation	INMD	IDIS
03.03F	Repeat office visit - referral cases only	INMD	NEPH
03.04C	Hospital admission	INMD	NEPH
03.05A	Intensive care unit visit per 15 mins	INMD	NEPH
03.07A	Minor consultation	INMD	NEPH
03.07B	Repeat consultation	INMD	NEPH
03.08A	Comprehensive consultation	INMD	NEPH
13.99B	Assessment and management of a stable patient with chronic renal failure treated by hemodialysis	INMD	NEPH
13.99D	Assessment and management of a stable patient with chronic renal failure treated by peritoneal dial	INMD	NEPH
03.03A	Visit not requiring complete history and evaluation	INMD	NEUR
03.03D	Hospital visits	INMD	NEUR
03.03F	Repeat office visit - referral cases only	INMD	NEUR
03.03G	Reassessment of a referred in-patient	INMD	NEUR
03.04A	Comprehensive visit	INMD	NEUR
03.04C	Hospital admission	INMD	NEUR
03.05A	Intensive care unit visit per 15 mins	INMD	NEUR
03.05J	Formal, scheduled, multiple health discipline team conference	INMD	NEUR
03.07A	Minor consultation	INMD	NEUR
03.07B	Repeat consultation	INMD	NEUR
03.08A	Comprehensive consultation	INMD	NEUR
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	INMD	NUSG
50.94A	Introduction of venous catheter for CVP monitoring	INMD	NUSG
01.03	Direct laryngoscopy	INMD	OTOL
54.92C	Dilation by sound or bougie, via rigid esophagoscopy, initial	INMD	OTOL
98.89E	Skin test, airborne allergens, intradermal or prick, per test	INMD	OTOL
98.89F	Skin test, food allergens, intradermal or prick, per test	INMD	OTOL
03.03F	Repeat office visit - referral cases only	INMD	PED
03.05A	Intensive care unit visit per 15 mins	INMD	PED
03.05T	Formal, scheduled, professional interview relating to the care and treatment of a palliative care patie	INMD	PED
03.07A	Minor consultation	INMD	PED
03.07B	Repeat consultation	INMD	PED
03.08A	Comprehensive consultation	INMD	PED
13.59A	Intramuscular or subcutaneous injections	INMD	PED
13.99B	Assessment and management of a stable patient with chronic renal failure treated by hemodialysis	INMD	PED
13.99J	Medical emergency detention - per 15 minutes	INMD	PED
50.94A	Introduction of venous catheter for CVP monitoring	INMD	PED
98.89D	Skin test, patch, per test	INMD	PED
98.89E	Skin test, airborne allergens, intradermal or prick, per test	INMD	PED
98.89F	Skin test, food allergens, intradermal or prick, per test	INMD	PED

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
03.08A	Comprehensive consultation	INMD	PHMD
95.96A	Other bursae, tendon sheaths, ganglion of wrist or ankle, aspiration, injection	INMD	PHMD
DERIVED34	93.91B INMD to 93.91B PHMD	INMD	PHMD
03.03F	Repeat office visit - referral cases only	INMD	RSMD
03.03G	Reassessment of a referred in-patient	INMD	RSMD
03.04A	Comprehensive visit	INMD	RSMD
03.05A	Intensive care unit visit per 15 mins	INMD	RSMD
03.07B	Repeat consultation	INMD	RSMD
03.08A	Comprehensive consultation	INMD	RSMD
03.38D	Vitalometry - alone	INMD	RSMD
03.38P	Oxygen saturation (ear oximetry with exercise)	INMD	RSMD
03.52B	Electrocardiogram, interpretation	INMD	RSMD
46.91	Thoracentesis	INMD	RSMD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	INMD	RSMD
03.03A	Visit not requiring complete history and evaluation	NEPH	IDIS
03.03D	Hospital visits	NEPH	IDIS
03.05A	Intensive care unit visit per 15 mins	NEPH	IDIS
03.07A	Minor consultation	NEPH	IDIS
03.03F	Repeat office visit - referral cases only	NEPH	INMD
03.04C	Hospital admission	NEPH	INMD
03.05A	Intensive care unit visit per 15 mins	NEPH	INMD
03.07A	Minor consultation	NEPH	INMD
03.07B	Repeat consultation	NEPH	INMD
03.08A	Comprehensive consultation	NEPH	INMD
13.99B	Assessment and management of a stable patient with chronic renal failure treated by hemodialysis	NEPH	INMD
13.99D	Assessment and management of a stable patient with chronic renal failure treated by peritoneal dia	NEPH	INMD
03.03A	Visit not requiring complete history and evaluation	NEPH	NEUR
DERIVED52	03.08A NEPH to 08.19A PSYC	NEPH	PSYC
03.03A	Visit not requiring complete history and evaluation	NEPH	RSMD
03.03D	Hospital visits	NEPH	RSMD
03.03F	Repeat office visit - referral cases only	NEUR	IDIS
03.07A	Minor consultation	NEUR	IDIS
03.03A	Visit not requiring complete history and evaluation	NEUR	INMD
03.03D	Hospital visits	NEUR	INMD
03.03F	Repeat office visit - referral cases only	NEUR	INMD
03.03G	Reassessment of a referred in-patient	NEUR	INMD
03.04A	Comprehensive visit	NEUR	INMD
03.04C	Hospital admission	NEUR	INMD
03.05A	Intensive care unit visit per 15 mins	NEUR	INMD
03.05J	Formal, scheduled, multiple health discipline team conference	NEUR	INMD
03.07A	Minor consultation	NEUR	INMD
03.07B	Repeat consultation	NEUR	INMD
03.08A	Comprehensive consultation	NEUR	INMD
03.03A	Visit not requiring complete history and evaluation	NEUR	NEPH
23.99D	Injection of Botulinum A Toxin, That for strabismus, blepharospasm or hemifacial spasm	NEUR	OPHT
23.99E	Follow up treatment, Injection of Botulinum A Toxin, That for strabismus, blepharospasm or hemifac	NEUR	OPHT
09.24B	Electronystagmography (ENG) with differential vestibular testing, including caloric tests interpretatic	NEUR	OTOL
07.09B	Conduction studies and electromyography, one limb, interpretation	NEUR	PHMD
DERIVED02	03.03D NEUR to 03.03D PHMD	NEUR	PHMD
DERIVED13	03.08A NEUR to 03.08A PHMD	NEUR	PHMD
DERIVED23	07.09A NEUR to 07.09A PHMD	NEUR	PHMD

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
DERIVED58	03.08A NEUR to 08.19G PSYC	NEUR	PSYC
50.94A	Introduction of venous catheter for CVP monitoring	NUSG	CRCM
03.08A	Comprehensive consultation	NUSG	CVT
13.62A	Ventilatory support, in ICU	NUSG	GNSG
50.94A	Introduction of venous catheter for CVP monitoring	NUSG	GNSG
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	NUSG	INMD
50.94A	Introduction of venous catheter for CVP monitoring	NUSG	INMD
90.68A	Removal of Luque rods, spine	NUSG	ORTH
93.05A	Anterior or multi-level posterior approach with instrumentation	NUSG	ORTH
14.49H	Craniotomy/Craniectomy, Removal of tumor of the cranial base,	NUSG	OTOL
14.49J	Craniotomy/Craniectomy, Transpetrous removal of intracranial tumor,	NUSG	OTOL
15.12A	Craniotomy and repair of C.S.F. fistula	NUSG	OTOL
43.1 A	Tracheostomy	NUSG	OTOL
51.59A	Other repair of blood vessel NEC Open	NUSG	OTOL
17.39B	Major nerve exploration	NUSG	PLAS
17.81A	Sural nerve biopsy	NUSG	PLAS
90.09B	Autogenous bone graft, different site, insertion	NUSG	PLAS
90.09C	Autogenous bone graft, same site, insertion	NUSG	PLAS
13.62A	Ventilatory support, in ICU	NUSG	RSMD
X235	Echography, scan B-mode, pregnancy diagnosis	OBGY	DIRDX
X236	Fetal age determination (biparietal diameter)	OBGY	DIRDX
X237	Fetal growth rate (series of X-236)	OBGY	DIRDX
X238	Placenta localization	OBGY	DIRDX
X239	Pregnancy, complete (X-235, X-236 and X-238 combined)	OBGY	DIRDX
X239A	Complete, real-time ultrasound scan for complete detailed prenatal fetal evaluation	OBGY	DIRDX
X240	Molar pregnancy diagnosis	OBGY	DIRDX
X241	Ectopic pregnancy diagnosis	OBGY	DIRDX
X243	Pelvic mass diagnosis	OBGY	DIRDX
X258	Transvaginal ultrasound,	OBGY	DIRDX
X258A	Transvaginal ultrasound in addition to pelvic ultrasound	OBGY	DIRDX
66.19A	Other laparotomy	OBGY	GNSG
66.3 B	Retroperitoneal tumor, excision	OBGY	GNSG
66.83	Laparoscopy, diagnostic, with or without biopsy	OBGY	GNSG
12.23	Removal of intraluminal foreign body from vagina without incision	OBGY	GP
81.01A	Incomplete abortion (D & C) up to and including 12 weeks	OBGY	GP
81.09	Other dilation and curettage	OBGY	GP
81.8	Insertion of intra-uterine contraceptive device	OBGY	GP
83.09A	Perineal abscess, I & D, marsupialization	OBGY	GP
83.12	Incision of Bartholin's gland (cyst)	OBGY	GP
86.0	Classical cesarean section	OBGY	GP
87.52	Insertion of scalp electrodes	OBGY	GP
87.6	Removal of retained placenta	OBGY	GP
87.98A	Vaginal delivery	OBGY	GP
03.04A	Comprehensive visit	OBGY	UROL
03.07B	Repeat consultation	OBGY	UROL
03.08A	Comprehensive consultation	OBGY	UROL
69.71	Suture of bladder, That for (traumatic) laceration	OBGY	UROL
70.2 A	Excision or cautery of caruncle	OBGY	UROL
71.5 A	Marshall marchetti	OBGY	UROL
71.7 A	Anterior urethropexy	OBGY	UROL

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
71.7 B	Repeat repair of urinary (stress) incontinence	OBGY	UROL
22.11A	Excision of benign tumor of lid	OPHT	DERM
22.13A	Excision of simple lesion(s) eyelid	OPHT	DERM
22.5 A	Simple suture eyelids	OPHT	EMSP
23.99D	Injection of Botulinum A Toxin, That for strabismus, blepharospasm or hemifacial spasm 101.28	OPHT	NEUR
23.99E	Follow up treatment, Injection of Botulinum A Toxin, That for strabismus, blepharospasm or hemifac	OPHT	NEUR
03.02A	Abbreviated assessment of a patient's condition	OPHT	OTOL
03.04C	Hospital admission	OPHT	OTOL
21.72	Conjunctivocystorhinostomy	OPHT	OTOL
29.0 B	Exploration and decompression, orbitotomy	OPHT	OTOL
29.0 C	Incision and drainage of abscess, orbitotomy	OPHT	OTOL
29.09A	Trans-antral orbital decompression	OPHT	OTOL
29.09B	Decompression of orbit and/or removal of orbital tumor	OPHT	OTOL
29.4	Exenteration of orbital contents	OPHT	OTOL
22.11A	Excision of benign tumor of lid	OPHT	PLAS
22.13A	Excision of simple lesion(s) eyelid	OPHT	PLAS
22.4 A	Correction of blepharoptosis, all procedures	OPHT	PLAS
22.62A	Lower/upper repair of redundant skin	OPHT	PLAS
22.69A	Blepharoplasty, Full thickness without flap or graft	OPHT	PLAS
22.69B	Blepharoplasty, Full thickness with flap or graft	OPHT	PLAS
29.01A	Removal of anterior orbital tumor including lacrimal gland biopsy if performed	OPHT	PLAS
18.29E	Paravertebral block	ORTH	ANES
91.00C	CR fracture, humerus, Shaft	ORTH	EMSP
91.70A	CR of dislocation, Shoulder, Primary	ORTH	EMSP
91.71	Closed reduction of dislocation of elbow	ORTH	EMSP
03.03F	Repeat office visit - referral cases only	ORTH	GNSG
03.03G	Reassessment of a referred in-patient	ORTH	GNSG
03.04A	Comprehensive visit	ORTH	GNSG
03.07A	Minor consultation	ORTH	GNSG
03.07B	Repeat consultation	ORTH	GNSG
17.33	Release of carpal tunnel	ORTH	GNSG
94.21A	Excision, Ganglion of hand	ORTH	GNSG
98.11B	Debridement of wound or infected tissue, over 32 and up to 64 sq cms	ORTH	GNSG
91.00C	CR fracture, humerus, Shaft	ORTH	GP
91.74A	Closed reduction of dislocation of hip	ORTH	GP
93.91B	Joint aspiration, injection, other joints	ORTH	GP
95.93	Injection/aspiration of therapeutic substance into bursa, subacromial	ORTH	GP
90.68A	Removal of Luque rods, spine	ORTH	NUSG
93.05A	Anterior or multi-level posterior approach with instrumentation	ORTH	NUSG
03.03A	Visit not requiring complete history and evaluation	ORTH	PLAS
03.04A	Comprehensive visit	ORTH	PLAS
03.05J	Formal, scheduled, multiple health discipline team conference	ORTH	PLAS
03.07A	Minor consultation	ORTH	PLAS
03.07B	Repeat consultation	ORTH	PLAS
03.08A	Comprehensive consultation	ORTH	PLAS
17.33	Release of carpal tunnel	ORTH	PLAS
17.5 B	Ulnar nerve transposition (includes release)	ORTH	PLAS
89.03	Sequestrectomy, carpals and metacarpals	ORTH	PLAS
89.07	Sequestrectomy, tarsals and metatarsals	ORTH	PLAS
89.09A	Sequestrectomy, Large bone	ORTH	PLAS
89.09B	Sequestrectomy, Large bone with bone graft	ORTH	PLAS
89.12B	Head or neck excision, radius and ulna	ORTH	PLAS
89.23	Wedge osteotomy, carpals and metacarpals	ORTH	PLAS

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
89.53A	Metacarpal, excision of tumor	ORTH	PLAS
89.53C	Metacarpal, with bone graft	ORTH	PLAS
89.57B	Saucerization, tarsals and metatarsals	ORTH	PLAS
89.58B	Saucerization , phalanx	ORTH	PLAS
89.58C	Local excision of lesion or tissue of bone, phalanx, with bone graft	ORTH	PLAS
89.59C	Saucerization large bone	ORTH	PLAS
89.59D	Saucerization with bone graft, large bone	ORTH	PLAS
90.03A	Bone graft, Carpal scaphoid	ORTH	PLAS
90.08A	Bone graft, Phalanges	ORTH	PLAS
90.6 B	Removal of plate, screw(s), nail, superficial	ORTH	PLAS
91.23A	OR of fracture, Phalanx	ORTH	PLAS
91.32A	ORIF of fracture, Metacarpal	ORTH	PLAS
91.32B	ORIF of fracture, Carpal bone(s)	ORTH	PLAS
91.33B	ORIF of fracture, Bennett's	ORTH	PLAS
91.83A	Open reduction of dislocation of Carpo-metacarpal	ORTH	PLAS
92.12	Arthrotomy, wrist	ORTH	PLAS
92.43A	MP joint or IP joint	ORTH	PLAS
92.46	Synovectomy, ankle	ORTH	PLAS
93.25	Carporadial fusion	ORTH	PLAS
93.26	Metacarpocarpal fusion	ORTH	PLAS
93.27	Metacarpophalangeal fusion	ORTH	PLAS
93.28	Interphalangeal fusion	ORTH	PLAS
93.87A	Arthroplasty, lower radio-ulnar joint	ORTH	PLAS
93.87B	Arthroplasty of wrist	ORTH	PLAS
94.21A	Excision, Ganglion of hand	ORTH	PLAS
94.82A	Tendon lengthening or shortening, hand	ORTH	PLAS
95.01A	Incision of tendon sheath	ORTH	PLAS
95.01B	Incision of tendon sheath, stenosing tenosynovitis or excision tendon sheath tumor	ORTH	PLAS
95.09A	Removal of deep foreign body, with or without imaging, first 15 minutes of operating time	ORTH	PLAS
95.29B	Excision ganglion	ORTH	PLAS
95.32A	Excision tendon sheaths forearm, wrist, tubercular or other granuloma	ORTH	PLAS
95.54B	Primary repair, extensor	ORTH	PLAS
95.65G	Transplantation or transfer of tendon, Distal Elbow	ORTH	PLAS
95.91A	Tenolysis	ORTH	PLAS
96.11A	Amputation Toe, one	ORTH	PLAS
96.12B	Amputation Transmetatarsal	ORTH	PLAS
96.12C	Amputation Mid-tarsal	ORTH	PLAS
96.14	Below knee amputation of lower leg	ORTH	PLAS
96.11A	Amputation Toe, one	ORTH	VSSG
96.12B	Amputation Transmetatarsal	ORTH	VSSG
96.14	Below knee amputation of lower leg	ORTH	VSSG
96.15	Amputation of thigh or disarticulation of knee, Supracondylar Thigh through femur	ORTH	VSSG
33.3 A	Rhinophyma	OTOL	DERM
39.21A	Biopsy of palate	OTOL	DERM
98.12B	Excisional biopsy, skin of face	OTOL	DERM
98.5 A	Rotation or transposition flap	OTOL	DERM
98.6 E	Leukoplakia vermilionectomy and wedge resection	OTOL	DERM
19.81	Percutaneous (needle) biopsy of thyroid	OTOL	E/M

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
12.12A	Removal of Intraluminal foreign body from esophagus, Via rigid esophagoscopy	OTOL	GNSG
19.6 A	Thyroglossal duct excision	OTOL	GNSG
19.6 B	Recurrent thyroglossal duct excision	OTOL	GNSG
37.91A	Release of simple tongue tie, clipping	OTOL	GNSG
37.91B	Release of complex tongue tie, that requiring Z plasty closure	OTOL	GNSG
38.0 A	Removal salivary gland calculus	OTOL	GNSG
38.21A	Sialoadenectomy, Submandibular gland	OTOL	GNSG
38.22A	Parotidectomy,Subtotal with preservation of facial nerve	OTOL	GNSG
38.22B	Parotidectomy,Subtotal repeat with preservation of facial nerve	OTOL	GNSG
38.23A	Total with preservation of facial nerve	OTOL	GNSG
38.23B	Total without preservation of facial nerve	OTOL	GNSG
40.1	Tonsillectomy without adenoidectomy	OTOL	GNSG
40.2	Tonsillectomy with adenoidectomy	OTOL	GNSG
41.1	Excision of branchial cleft cyst or vestiges	OTOL	GNSG
41.21	Cricopharyngeal myotomy	OTOL	GNSG
41.42	Closure of branchial cleft fistula	OTOL	GNSG
43.1 A	Tracheostomy	OTOL	GNSG
52.0 A	Drainage, deep cervical abscess	OTOL	GNSG
52.1 A	Biopsy, superficial lymph node	OTOL	GNSG
52.12	Excision of internal mammary lymph node	OTOL	GNSG
52.31A	Radical neck dissection, Limited (suprahyoid)	OTOL	GNSG
52.32	Radical neck dissection Complete, unilateral	OTOL	GNSG
54.09A	Esophagotomy for removal of foreign body, cervical	OTOL	GNSG
54.12	Cervical esophagostomy .	OTOL	GNSG
54.21A	Biopsy of esophagus via rigid esophagoscopy	OTOL	GNSG
54.6	Esophagomyotomy	OTOL	GNSG
54.92C	Dilation by sound or bougie, via rigid esophagoscopy, initial	OTOL	GNSG
13.42A	Desensitization treatments with autogenous vaccines	OTOL	GP
40.1	Tonsillectomy without adenoidectomy	OTOL	GP
40.2	Tonsillectomy with adenoidectomy	OTOL	GP
98.89E	Skin test, airborne allergens, intradermal or prick, per test	OTOL	GP
98.89F	Skin test, food allergens, intradermal or prick, per test	OTOL	GP
01.03	Direct laryngoscopy	OTOL	INMD
54.92C	Dilation by sound or bougie, via rigid esophagoscopy, initial	OTOL	INMD
98.89E	Skin test, airborne allergens, intradermal or prick, per test	OTOL	INMD
98.89F	Skin test, food allergens, intradermal or prick, per test	OTOL	INMD
09.24B	Electronystagmography (ENG) with differential vestibular testing, including caloric tests interpretatic	OTOL	NEUR
14.49H	Removal of tumor of the cranial base,	OTOL	NUSG
14.49J	Transpetrous removal of intracranial tumor	OTOL	NUSG
15.12A	Craniotomy and repair of C.S.F. fistula	OTOL	NUSG
43.1 A	Tracheostomy	OTOL	NUSG
51.59A	Other repair of blood vessel NEC Open transluminal angioplasty	OTOL	NUSG
03.02A	Abbreviated assessment of a patient's condition	OTOL	OPHT
03.04C	Hospital admission	OTOL	OPHT
21.72	Conjunctivocystorhinostomy	OTOL	OPHT
29.0 B	Exploration and decompression, orbitotomy	OTOL	OPHT
29.0 C	Incision and drainage of abscess, orbitotomy	OTOL	OPHT
29.09A	Trans-antral orbital decompression	OTOL	OPHT
29.09B	Decompression of orbit and/or removal of orbital tumor	OTOL	OPHT
29.4	Exenteration of orbital contents	OTOL	OPHT

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
01.09	Other nonoperative bronchoscopy	OTOL	PED
13.42A	Desensitization treatments with autogenous vaccines	OTOL	PED
01.05A	Nasendoscopy	OTOL	PLAS
17.4 B	Peripheral nerve reconstruction utilizing microsurgical technique, minor, single cable	OTOL	PLAS
17.4 C	Peripheral nerve reconstruction utilizing microsurgical technique, major, multiple cables	OTOL	PLAS
30.11A	Excision of preauricular sinus, primary	OTOL	PLAS
30.11B	Secondary excision of preauricular sinus	OTOL	PLAS
30.19B	Excision of accessory auricle	OTOL	PLAS
30.3 A	Post traumatic major ear reconstruction	OTOL	PLAS
30.4 A	Otoplasty	OTOL	PLAS
33.21B	Dermoid cyst	OTOL	PLAS
33.22B	Mucosal biopsy	OTOL	PLAS
33.4	Submucous resection of nasal septum	OTOL	PLAS
33.51A	Submucosal diathermy of nasal turbinate	OTOL	PLAS
33.51B	Turbinectomy, by other methods	OTOL	PLAS
33.61A	Fracture intra-nasal reduction and splinting	OTOL	PLAS
33.62A	Open reduction of nasal fracture, and mini-plate fixation	OTOL	PLAS
33.73A	Rhinoplasty with Silastic implant	OTOL	PLAS
33.74A	Rhinoplasty with Composite graft	OTOL	PLAS
33.76A	Rhinoplasty, Tip revision	OTOL	PLAS
33.76B	Rhinoplasty, Hump removal	OTOL	PLAS
33.76C	Rhinoplasty Infracture	OTOL	PLAS
33.76D	Rhinoplasty Hump removal and infracture	OTOL	PLAS
33.76F	Complete rhinoplasty and S.M.R. (1 surgeon)	OTOL	PLAS
33.76G	Repair of nasal septum perforation	OTOL	PLAS
33.76H	Repeat reconstructive rhinoplasty following previous complete rhinoplasty	OTOL	PLAS
37.82A	Biopsy of tongue	OTOL	PLAS
37.91B	Release of complex tongue tie, that requiring Z plasty closure	OTOL	PLAS
52.1 B	Cystic hygroma, per 60 minutes or portion thereof	OTOL	PLAS
88.14D	OR Mandibular fracture, mini-plate fixation, one plate or lag screws	OTOL	PLAS
88.14E	OR Mandibular fracture, with mini-plate fixation, more than one plate or lag screws in more than one	OTOL	PLAS
88.16B	Orbital floor fracture, Mini-plate fixation of fractured supraorbital ridge via coronal approach	OTOL	PLAS
88.19A	Open Reduction of other facial fracture, with mini-plate fixation of fractured frontal bone via coronal	OTOL	PLAS
88.51A	Segmental resection, mandible	OTOL	PLAS
88.99A	Osseointegrated cranio-facial reconstruction, One or two fixtures, first stage	OTOL	PLAS
88.99B	Osseointegrated cranio-facial reconstruction, One or two fixtures, second stage	OTOL	PLAS
98.12B	Excisional biopsy, skin of face	OTOL	PLAS
98.49C	Non-functional split thickness skin grafts, over 64 and up to 100 sq cms	OTOL	PLAS
98.51B	Composite compound flap using two or more of the following: skin, muscle, bone: with axial blood s	OTOL	PLAS
98.51C	Free flaps involving microsurgical technique and neuro-vascular hook up, per hour	OTOL	PLAS
98.6 A	Simple excision of carcinoma of lip	OTOL	PLAS
98.6 B	Major excision of carcinoma of lip	OTOL	PLAS
98.6 C	Leukoplakia wedge resection	OTOL	PLAS
98.6 E	Leukoplakia vermilionectomy and wedge resection	OTOL	PLAS
98.6 L	Secondary reconstruction of cleft lip and palate, revision of one of mucosa, skin, muscle, nostril floo	OTOL	PLAS
98.6 N	Secondary reconstruction of cleft lip and palate, complete lip reconstruction	OTOL	PLAS
98.6 P	Secondary reconstruction of cleft lip and palate, Abbe flap	OTOL	PLAS
98.71A	Correction of syndactyly, with local flaps	OTOL	PLAS
98.79A	Transplantation of auricular cartilage, costal cartilage or bone graft, to nose, orbit, forehead, etc	OTOL	PLAS
98.79C	Insertion of bone/cartilage/prosthetic graft	OTOL	PLAS

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
03.03D	Hospital visits	OTOL	UROL
03.03L	Emergent visit/special call-back 1700 - 2300 hours - weekdays, also 0800 to 2300 hours, Saturday,	OTOL	UROL
13.4 A	Scalp vein transfusion or infusion	PED	ANES
50.94A	Introduction of venous catheter for CVP monitoring	PED	ANES
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	PED	CARD
50.94A	Introduction of venous catheter for CVP monitoring	PED	CARD
13.99E	Resuscitation, first hour	PED	CRCM
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	PED	CRCM
01.09	Other nonoperative bronchoscopy	PED	CVT
13.99H	Critical care of severely ill or injured patient in a hospital emergency department requiring major trea	PED	EMSP
98.22A	Laceration, face, up to 2.5 cms (1 unit) or body, up to 5 cms (1 unit	PED	EMSP
98.22B	Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit)	PED	EMSP
13.59A	Intramuscular or subcutaneous injections	PED	GP
98.89E	Skin test, airborne allergens, intradermal or prick, per test	PED	GP
98.89F	Skin test, food allergens, intradermal or prick, per test	PED	GP
03.03F	Repeat office visit - referral cases only	PED	INMD
03.05A	Intensive care unit visit per 15 mins	PED	INMD
03.05T	Formal, scheduled, professional interview relating to the care and treatment of a palliative care patie	PED	INMD
03.07A	Minor consultation	PED	INMD
03.07B	Repeat consultation	PED	INMD
03.08A	Comprehensive consultation	PED	INMD
13.59A	Intramuscular or subcutaneous injections	PED	INMD
13.99B	Assessment and management of a stable patient with chronic renal failure treated by hemodialysis	PED	INMD
13.99J	Medical emergency detention - per 15 minutes	PED	INMD
50.94A	Introduction of venous catheter for CVP monitoring	PED	INMD
98.89D	Skin test, patch, per test	PED	INMD
98.89E	Skin test, airborne allergens, intradermal or prick, per test	PED	INMD
98.89F	Skin test, food allergens, intradermal or prick, per test	PED	INMD
01.09	Other nonoperative bronchoscopy	PED	OTOL
13.42A	Desensitization treatments with autogenous vaccines	PED	OTOL
DERIVED54	03.08A PED to 08.19A PSYC	PED	PSYC
03.08A	Comprehensive consultation	PED	RSMD
03.08A	Comprehensive consultation	PHMD	INMD
95.96A	Other bursae, tendon sheaths, ganglion of wrist or ankle, aspiration, injection	PHMD	INMD
DERIVED35	93.91B PHMD to 93.91B INMD	PHMD	INMD
07.09B	Conduction studies and electromyography, one limb, interpretation	PHMD	NEUR
DERIVED04	03.03D PHMD to 03.03D NEUR	PHMD	NEUR
DERIVED16	03.08A PHMD to 03.08A NEUR	PHMD	NEUR
DERIVED24	07.09A PHMD to 07.09A NEUR	PHMD	NEUR
17.71A	Local block(s) of somatic nerve(s)	PLAS	DERM
33.22B	Mucosal biopsy, nose	PLAS	DERM
98.12G	Laser treatment of cutaneous vascular tumors	PLAS	DERM
03.02A	Abbreviated assessment of a patient's condition	PLAS	GNSG
03.03A	Visit not requiring complete history and evaluation	PLAS	GNSG
03.04A	Comprehensive visit	PLAS	GNSG
03.07A	Minor consultation	PLAS	GNSG
17.33	Release of carpal tunnel	PLAS	GNSG
37.91B	Release of complex tongue tie, that requiring Z plasty closure	PLAS	GNSG
41.1	Excision of branchial cleft cyst or vestiges	PLAS	GNSG
43.1 A	Tracheostomy	PLAS	GNSG
95.09A	Removal of deep foreign body, with or without imaging, first 15 minutes of operating time	PLAS	GNSG
97.29A	Simple mastectomy	PLAS	GNSG
98.12A	Excisional biopsy, skin	PLAS	GNSG

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
98.12B	Excisional biopsy, skin of face	PLAS	GNSG
98.12C	Removal of sebaceous cyst	PLAS	GNSG
98.12D	Bilateral excision, apocrine glands, major	PLAS	GNSG
98.12E	Bilateral excision, apocrine glands, minor	PLAS	GNSG
98.12H	Excision of soft tissue tumor (subcutaneous) up to 30 minutes of operating time	PLAS	GNSG
17.39B	Major nerve exploration	PLAS	NUSG
17.81A	Sural nerve biopsy	PLAS	NUSG
90.09B	Autogenous bone graft, different site, insertion	PLAS	NUSG
90.09C	Autogenous bone graft, same site, insertion	PLAS	NUSG
22.11A	Excision of benign tumor of eyelid	PLAS	OPHT
22.13A	Excision of simple lesion(s) eyelid	PLAS	OPHT
22.4 A	Correction of blepharoptosis, all procedures	PLAS	OPHT
22.62A	Lower/upper repair of redundant skin, rhytidectomy	PLAS	OPHT
22.69A	Full thickness without flap or graft, blepharoplasty	PLAS	OPHT
22.69B	Full thickness with flap or graft, blepharoplasty	PLAS	OPHT
29.01A	Removal of anterior orbital tumor including lacrimal gland biopsy if performed	PLAS	OPHT
03.03A	Visit not requiring complete history and evaluation	PLAS	ORTH
03.04A	Comprehensive visit	PLAS	ORTH
03.05J	Formal, scheduled, multiple health discipline team conference	PLAS	ORTH
03.07A	Minor consultation	PLAS	ORTH
03.07B	Repeat consultation	PLAS	ORTH
03.08A	Comprehensive consultation	PLAS	ORTH
17.33	Release of carpal tunnel	PLAS	ORTH
17.5 B	Ulnar nerve transposition (includes release)	PLAS	ORTH
89.03	Sequestrectomy, carpals and metacarpals	PLAS	ORTH
89.07	Sequestrectomy, tarsals and metatarsals	PLAS	ORTH
89.09A	Sequestrectomy, Large bone	PLAS	ORTH
89.09B	Sequestrectomy, Large bone with bone graft	PLAS	ORTH
89.12B	Head or neck excision, radius and ulna	PLAS	ORTH
89.23	Wedge osteotomy, carpals and metacarpals	PLAS	ORTH
89.53A	Metacarpal, excision of tumor	PLAS	ORTH
89.53C	Metacarpal, with bone graft	PLAS	ORTH
89.57B	Saucerization, tarsals and metatarsals	PLAS	ORTH
89.58B	Saucerization , phalanx	PLAS	ORTH
89.58C	Local excision of lesion or tissue of bone, phalanx, with bone graft	PLAS	ORTH
89.59C	Saucerization large bone	PLAS	ORTH
89.59D	Saucerization with bone graft, large bone	PLAS	ORTH
90.03A	Bone graft, Carpal scaphoid	PLAS	ORTH
90.08A	Bone graft, Phalanges	PLAS	ORTH
90.6 B	Removal of plate, screw(s), nail, superficial	PLAS	ORTH
91.23A	OR of fracture, Phalanx	PLAS	ORTH
91.32A	ORIF of fracture, Metacarpal	PLAS	ORTH
91.32B	ORIF of fracture, Carpal bone(s)	PLAS	ORTH
91.33B	ORIF of fracture, Bennett's	PLAS	ORTH
91.83A	Open reduction of dislocation of Carpo-metacarpal	PLAS	ORTH
92.12	Arthrotomy, wrist	PLAS	ORTH
92.43A	MP joint or IP joint	PLAS	ORTH
92.46	Synovectomy, ankle	PLAS	ORTH

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
93.25	Carporadial fusion	PLAS	ORTH
93.26	Metacarpocarpal fusion	PLAS	ORTH
93.27	Metacarpophalangeal fusion	PLAS	ORTH
93.28	Interphalangeal fusion	PLAS	ORTH
93.87A	Arthroplasty, lower radio-ulnar joint	PLAS	ORTH
93.87B	Arthroplasty of wrist	PLAS	ORTH
94.21A	Excision, Ganglion of hand	PLAS	ORTH
94.82A	Tendon lengthening or shortening, hand	PLAS	ORTH
95.01A	Incision of tendon sheath	PLAS	ORTH
95.01B	Incision of tendon sheath, stenosing tenosynovitis or excision tendon sheath tumor	PLAS	ORTH
95.09A	Removal of deep foreign body, with or without imaging, first 15 minutes of operating time	PLAS	ORTH
95.29B	Excision ganglion	PLAS	ORTH
95.32A	Excision tendon sheaths forearm, wrist, tubercular or other granuloma	PLAS	ORTH
95.54B	Primary repair, extensor	PLAS	ORTH
95.65G	Transplantation or transfer of tendon, Distal Elbow	PLAS	ORTH
95.91A	Tenolysis, muscle tendon, facia and bursa	PLAS	ORTH
96.11A	Amputation Toe, one	PLAS	ORTH
96.12B	Amputation Transmetatarsal	PLAS	ORTH
96.12C	Amputation Mid-tarsal	PLAS	ORTH
96.14	Below knee amputation of lower leg	PLAS	ORTH
01.05A	Nasendoscopy	PLAS	OTOL
17.4 B	Peripheral nerve reconstruction utilizing microsurgical technique, minor, single cable	PLAS	OTOL
17.4 C	Peripheral nerve reconstruction utilizing microsurgical technique, major, multiple cables	PLAS	OTOL
30.11A	Excision of preauricular sinus, primary	PLAS	OTOL
30.11B	Secondary excision of preauricular sinus	PLAS	OTOL
30.19B	Excision of accessory auricle	PLAS	OTOL
30.3 A	Post traumatic major ear reconstruction	PLAS	OTOL
30.4 A	Otoplasty	PLAS	OTOL
33.21B	Dermoid cyst	PLAS	OTOL
33.22B	Mucosal biopsy, nose	PLAS	OTOL
33.4	Submucous resection of nasal septum	PLAS	OTOL
33.51A	Submucosal diathermy of nasal turbinate	PLAS	OTOL
33.51B	Turbinectomy, by other methods	PLAS	OTOL
33.61A	Fracture intra-nasal reduction and splinting	PLAS	OTOL
33.62A	Open reduction of nasal fracture, and mini-plate fixation	PLAS	OTOL
33.73A	Rhinoplasty with Silastic implant	PLAS	OTOL
33.74A	Rhinoplasty with Composite graft	PLAS	OTOL
33.76A	Rhinoplasty, Tip revision	PLAS	OTOL
33.76B	Rhinoplasty, Hump removal	PLAS	OTOL
33.76C	Rhinoplasty, Infracture	PLAS	OTOL
33.76D	Rhinoplasty, Hump removal and infracture	PLAS	OTOL
33.76F	Complete rhinoplasty and S.M.R. (1 surgeon)	PLAS	OTOL
33.76G	Repair of nasal septum perforation	PLAS	OTOL
33.76H	Repeat reconstructive rhinoplasty following previous complete rhinoplasty	PLAS	OTOL
37.82A	Biopsy of tongue	PLAS	OTOL
37.91B	Release of complex tongue tie, that requiring Z plasty closure	PLAS	OTOL
52.1 B	Cystic hygroma, per 60 minutes or portion thereof	PLAS	OTOL
88.14D	OR Mandibular fracture, mini-plate fixation, one plate or lag screws	PLAS	OTOL
88.14E	OR Mandibular fracture, with mini-plate fixation, more than one plate or lag screws in more than one	PLAS	OTOL
88.16B	Mini-plate fixation of fractured supraorbital ridge via coronal approach	PLAS	OTOL

Cross Links Used to Develop the Common Scale

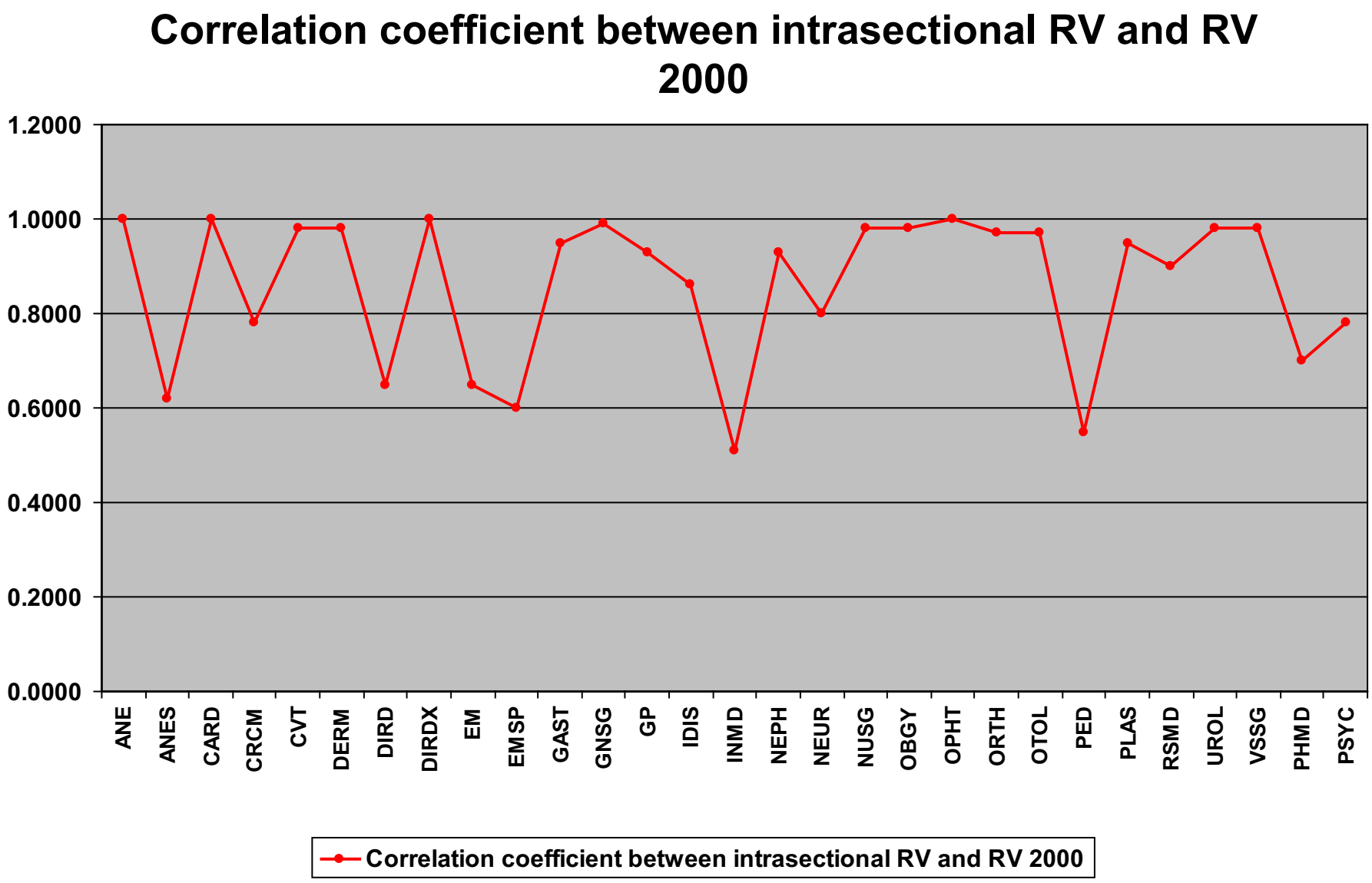
HSC	Description	Section 1	Section 2
88.19A	Open reduction of other facial fracture, with mini-plate fixation of fractured frontal bone via coronal a	PLAS	OTOL
88.51A	Segmental resection, mandible	PLAS	OTOL
88.99A	Osseointegrated cranio-facial reconstruction, One or two fixtures, first stage	PLAS	OTOL
88.99B	Osseointegrated cranio-facial reconstruction, One or two fixtures, second stage	PLAS	OTOL
98.12B	Excisional biopsy, skin of face	PLAS	OTOL
98.49C	Non-functional split thickness skin grafts, over 64 and up to 100 sq cms	PLAS	OTOL
98.51B	Composite compound flap using two or more of the following: skin, muscle, bone: with axial blood s	PLAS	OTOL
98.51C	Free flaps involving microsurgical technique and neuro-vascular hook up, per hour	PLAS	OTOL
98.6 A	Simple excision of carcinoma of lip	PLAS	OTOL
98.6 B	Major excision of carcinoma of lip	PLAS	OTOL
98.6 C	Leukoplakia wedge resection	PLAS	OTOL
98.6 E	Leukoplakia vermilionectomy and wedge resection	PLAS	OTOL
98.6 L	Secondary reconstruction of cleft lip and palate, revision of one of mucosa, skin, muscle, nostril floo	PLAS	OTOL
98.6 N	Secondary reconstruction of cleft lip and palate, complete lip reconstruction	PLAS	OTOL
98.6 P	Secondary reconstruction of cleft lip and palate, Abbe flap	PLAS	OTOL
98.71A	Correction of syndactyly, with local flaps	PLAS	OTOL
98.79A	Transplantation of auricular cartilage, costal cartilage or bone graft, to nose, orbit, forehead, etc	PLAS	OTOL
98.79C	Insertion of bone/cartilage/prosthetic graft	PLAS	OTOL
95.15A	Fasciotomy, leg or arm	PLAS	VSSG
96.05	Amputation through forearm	PLAS	VSSG
96.11A	Amputation Toe, one	PLAS	VSSG
96.12B	Amputation Transmetatarsal	PLAS	VSSG
DERIVED55	08.19G PSYC to 03.08A CRCM	PSYC	CRCM
08.12A	Certification under the Mental Health Act	PSYC	GP
DERIVED49	08.19G PSYC to 03.05I GP	PSYC	GP
DERIVED51	08.19A PSYC to 03.08A NEPH	PSYC	NEPH
DERIVED57	08.19G PSYC to 03.08A NEUR	PSYC	NEUR
DERIVED53	08.19A PSYC to 03.08A PED	PSYC	PED
DERIVED61	08.19G PSYC to 03.08A RSMD	PSYC	RSMD
13.62A	Ventilatory support, in ICU	RSMD	ANES
03.52B	Electrocardiogram, interpretation	RSMD	CARD
13.62A	Ventilatory support, in ICU	RSMD	CARD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	RSMD	CARD
DERIVED43	03.03D RSMD to 03.05A CARD	RSMD	CARD
03.05A	Intensive care unit visit per 15 mins	RSMD	CRCM
13.62A	Ventilatory support, in ICU	RSMD	CRCM
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	RSMD	CRCM
03.03D	Hospital visits	RSMD	E/M
03.03F	Repeat office visit - referral cases only	RSMD	E/M
03.08A	Comprehensive consultation	RSMD	E/M
03.03A	Visit not requiring complete history and evaluation	RSMD	IDIS
03.03D	Hospital visits	RSMD	IDIS
03.03F	Repeat office visit - referral cases only	RSMD	IDIS
03.04A	Comprehensive visit	RSMD	IDIS
03.07B	Repeat consultation	RSMD	IDIS
03.08A	Comprehensive consultation	RSMD	IDIS
03.03F	Repeat office visit - referral cases only	RSMD	INMD
03.03G	Reassessment of a referred in-patient	RSMD	INMD
03.04A	Comprehensive visit	RSMD	INMD
03.05A	Intensive care unit visit per 15 mins	RSMD	INMD
03.07B	Repeat consultation	RSMD	INMD

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
03.08A	Comprehensive consultation	RSMD	INMD
03.38D	Vitalometry - alone	RSMD	INMD
03.38P	Oxygen saturation (ear oximetry with exercise)	RSMD	INMD
03.52B	Electrocardiogram, interpretation	RSMD	INMD
46.91	Thoracentesis	RSMD	INMD
50.91A	Introduction of arterial catheter for pressure monitoring and/or blood gas monitoring percutaneous c	RSMD	INMD
03.03A	Visit not requiring complete history and evaluation	RSMD	NEPH
03.03D	Hospital visits	RSMD	NEPH
13.62A	Ventilatory support, in ICU	RSMD	NUSG
03.08A	Comprehensive consultation	RSMD	PED
DERIVED62	03.08A RSMD to 08.19G PSYC	RSMD	PSYC
76.1 A	Laser therapy of lesion(s) of penis	UROL	DERM
69.83A	Cystogram and cystourethrogram, voiding	UROL	DIRD
72.91	Needle biopsy of prostate	UROL	DIRD
20.12	Unilateral adrenalectomy	UROL	GNSG
73.1 B	Repair of communicating hydrocele	UROL	GNSG
74.2 A	Unilateral orchiectomy	UROL	GNSG
74.4 D	Testicular fixation	UROL	GNSG
75.64	Vasectomy (complete) (partial)	UROL	GNSG
76.0	Circumcision	UROL	GNSG
75.64	Vasectomy (complete) (partial)	UROL	GP
76.0	Circumcision	UROL	GP
03.04A	Comprehensive visit	UROL	OBGY
03.07B	Repeat consultation	UROL	OBGY
03.08A	Comprehensive consultation	UROL	OBGY
69.71	Suture of bladder, That for (traumatic) laceration	UROL	OBGY
70.2 A	Excision or cautery of caruncle	UROL	OBGY
71.5 A	Marshall marchetti	UROL	OBGY
71.7 A	Anterior urethropexy	UROL	OBGY
71.7 B	Repeat repair of urinary (stress) incontinence	UROL	OBGY
03.03D	Hospital visits	UROL	OTOL
03.03L	Emergent visit/special call-back 1700 - 2300 hours - weekdays, also 0800 to 2300 hours, Saturday,	UROL	OTOL
66.98A	Insertion of indwelling intraperitoneal dialysis catheter	UROL	VSSG
50.33B	Resection of upper limb vessels, resection of aneurysm with graft	VSSG	CVT
50.34F	Resection of abdominal aortic aneurysm, straight tube graft	VSSG	CVT
50.34G	Resection of abdominal aortic aneurysm, reconstruction with aortic bi-iliac or aorto-bi-femoral graft	VSSG	CVT
50.34H	Resection of ruptured aortic aneurysm, straight tube graft	VSSG	CVT
50.34J	Resection of ruptured aortic aneurysm, aorto-bi-iliac or bi-femoral graft	VSSG	CVT
50.35A	Resection of other thoracic vessels, traumatic injury with graft	VSSG	CVT
50.38A	Resection of lower limb vessels, Traumatic injury with graft	VSSG	CVT
50.38B	Resection of lower limb vessels, Aneurysm with graft	VSSG	CVT
50.58A	Preparation of autogenous saphenous vein for graft	VSSG	CVT
51.27A	Creation of AV fistula	VSSG	CVT
51.29A	Femoral-popliteal bypass	VSSG	CVT
51.29B	Femoral-popliteal, artery bypass vein in-situ	VSSG	CVT
51.29D	Axillo-femoral bypass	VSSG	CVT
51.29E	Femoro-femoral bypass	VSSG	CVT
X245	Peripheral flow study (Doppler), arterial	VSSG	CVT
96.11A	Amputation Toe, one	VSSG	ORTH
96.12B	Amputation Transmetatarsal	VSSG	ORTH
96.14	Below knee amputation of lower leg	VSSG	ORTH
96.15	Amputation of thigh or disarticulation of knee, Supracondylar Thigh through femur	VSSG	ORTH
95.15A	Fasciotomy, leg or arm	VSSG	PLAS

Cross Links Used to Develop the Common Scale

HSC	Description	Section 1	Section 2
96.05	Amputation through forearm	VSSG	PLAS
96.11A	Amputation Toe, one	VSSG	PLAS
96.12B	Amputation Transmetatarsal	VSSG	PLAS
66.98A	Insertion of indwelling intraperitoneal dialysis catheter	VSSG	UROL


Correlation coefficient between intrasectional RV and RV 2000
1.2000
1.0000
0.8000
0.6000
0.4000
0.2000
0.0000
ANE
ANES
CARD
CRCM
CVT
DERM
DIRD
DIRDX
EM
EMSP
GAST
GNSG
GP
IDIS
INMD
NEPH
NEUR
NUSG
OBGY
OPHT
ORTH
OTOL
PED
PLAS
RSMD
UROL
VSSG
PHMD
PSYC
Correlation coefficient between intrasectional RV and RV 2000

Overview of Approach and Conclusions For Visits and Consults

January 2001

This paper explains the basic approach used and conclusions reached by the RVG Commission relating to visits and consults, and is provided in response to questions and concerns from section advisors. A more detailed paper on the procedure used for calculating visit and consult relative values is attached.

Consistency in basic approach

The Commission used the same basic approach to determine the relative values of procedures and visits/consults and then to convert the intra-sectional values into the common scale using more than 600 cross-links. This method ensured the relativity between procedures and visits/ consults was maintained.

A second step was used to further refine the relative values for visit/consults that have significant differences in the physician resource involved, for example 03.03A, 03.0A and 03.08A. This step used patient complexity scores obtained through the Visit and Consult Study. The rationale for this approach was:

a) Visits/consults incorporate a broader spectrum of physician work than procedures that are more narrowly defined. A further step to refine the relative values of visit and consults by section or groups of sections was needed to better quantify the relative differences in physician work.

b) The Commission believes there is a casual relationship between patient complexity (what the patient brings to the equation) and physician input or work (what the physician brings to the equation). This conclusion is exemplified by the proposed relative values for in-patient visits and consults. The underlying assumption is that, on average, in-patients have a higher patient complexity than non-in-patients and therefore require more physician work. A higher RV was therefore warranted.

Removal of rule limitations

In response to many sections' concerns about the rule limitation on the use of some codes, specifically 03.04A, the Commission recommends 03.04A be redefined and the current rule limitations be removed. The values available will therefore better reflect the physician work associated with more complex patients.

The commission also heard from many sections that the RV's and the broad definitions for visits and consult codes did not sufficiently reflect the work associated with patients who required above-average time to deal with their conditions. The Commission therefore recommends 03.04A and 0.308 codes contain a time release clause that can be activated after the pre-determined time for that service has been reached.

The Commission believes these two major recommendations are significant improvements to the current system by allowing physician work to be further defined, quantified and remunerated.

These recommendations may not go far enough in the eyes of some sections, the Commission recognizes, however, the Commission was constrained by the current research and available data.

The Commission also acknowledges some sections think it has gone too far by using patient complexity as a factor to determine the visits and consult RVs. A comparison of the current fee schedule among sections for the same code reveals a difference of up to 230%; the difference has been determined over time through sectional fee negotiations. These differentials are not the result of transparent and consistently applied methodology nor have they been determined by a method that is data-driven such as the Patient Complexity (Visit/Consult) Study.

The Commission's recommendations result in a substantially smaller range of differences and are based on an approach that has been consistently applied to all sections.

Recommendation for further research

In keeping with its belief that the RVG is a "work in progress," the Commission suggests further research be done to more accurately define and quantify the relative value of physician work. The Commission recommends research be expanded and enhanced into patient complexity for visits and consults as well as into quantifying the physician work involved for procedures.

Significant improvements achieved

The relative values assigned using the patient complexity score, along with some re-definitions and time release provision to current codes, by section, represent significant improvements over the current structure. The support and criticism from sections was invaluable in assisting the Commission in its work of recommending a new Relative Value Guide.

See Attachment: "Procedure for Calculating the Final Common Scale Relative Values for Office Visits & Consults – Use of the Patient Complexity Scores"

Section	Mean	# if Cases
Anes	3.4085	235
Card	4.6939	343
Crcm	4.4288	667
CVT	4.5088	452
EM	3.5492	193
Ernsp	3.8042	521
Gast	3.4329	164
Gnsg	3.2490	735
GP	2.7845	4933
Idis	3.5863	249
Inmd	3.6806	1149
Neph	3.4952	208
Neur	3.8125	192
Musg	4.1273	275
Obgy	2.7839	1041
Orth	3.2315	691
Ped	3.2318	673
Phmd	3.7101	138
Plas	2.4521	303
Psyc	4.1483	715
Rsmd	3.9342	304
Urol	2.8656	253
Vssg	3.1910	1089
Median	**3.5492**	

Section	Mean	# if Cases
Anes	3.3151	73
Card	4.4771	153
Crcm	4.2500	16
CVT	4.2541	181
EM	3.4805	154
Ernsp	3.8166	507
Gast	3.4646	127
Gnsg	2.9250	480
GP	2.7295	4440
Idis	3.1898	137
Inmd	3.5813	886
Neph	3.4853	204
Neur	3.7764	161
Musg	3.5327	107
Obgy	2.6985	776
Orth	3.1091	550
Ped	3.1889	487
Phmd	3.8286	70
Plas	2.1860	258
Psyc	3.8392	479
Rsmd	3.7163	215
Urol	2.8201	239
Vssg	3.8716	218
Median	**3.4853**	

Section	Mean	# if Cases
Anes	3.4800	125
Card	4.8852	183
Crcm	4.4908	542
CVT	4.8761	234
EM	3.8056	36
Ernsp	6.0000	1
Gast	3.9565	23
Gnsg	3.8927	233
GP	3.5751	273
Idis	4.1400	100
Inmd	4.1577	222
Neph		
Neur	4.8889	18
Musg	4.5641	156
Obgy	3.2684	190
Orth	3.7153	137
Ped	3.3275	171
Phmd	3.6094	64
Plas	4.4000	25
Psyc	4.6734	199
Rsmd	4.5072	69
Urol	3.6429	14
Vssg	4.9127	126
Median	**4.1489**	

Procedure for Calculating the Final Common Scale Relative Values (the "RV2000s") for Office Visits & Consults – Use of the Patient Complexity Scores ("PCS")

Introduction

At present there are two categories of office visits and consult codes within the Alberta Schedule of Medical Benefits (the "fee schedule"). The first category consists of codes where the service provided and the resulting amount of physician resource involved is the same regardless of which type of physician performs the service. These codes have traditionally carried the same fee for all types of physicians. An example of this type of code is 03.05 A (Intensive Care Unit Visit per 15 minutes), which is performed by nearly every type of practitioner, including: intensivists, general practitioners, internists, cardiologists, and anesthetists. The current fee for 03.05A is $35.27 for all physicians regardless of specialty.

Although this type of code constitutes the majority of office visits and consult codes, the service volumes for these codes is fairly modest; as a result, they account for a small proportion of the total payments received by physicians for performing office visits and consults.

The second category of codes consists of codes where the general nature of the service provided is similar across specialties, but where significant differences exist between specialties in the amount of physician resource involved. When different specialists carry out a service that is covered by these codes they are, in essence, providing different types of services that are simply billed under the same code number. These codes have traditionally carried different fees for different specialties. An example of this type of code is 03.08A (comprehensive consultation), which carries different fees for different sections, ranging from $44.79 for Dermatology to $111.45 for Physical Medicine.

Although there are only a few of this type of code, they account for a large proportion of the payments received by physicians for office visits and consults.

Procedure for Determining Common Relative Values ("RV2000s") for Category 1 Codes.
For codes where the service provided is the same regardless of which type of physician is involved a single RV 2000 is assigned to all sections. The method that is used is the same as that for developing RV2000s for procedural codes, namely:

1. the intra-sectional relative value assigned to the code by each section is converted onto a common scale using the conversion factors (or "exchange rates") developed through the cross-linking procedure: and,

2. the RV2000 is calculated as being a weighted average of the converted values on the common scale, where the weights are the service volumes by sections.

As in the case of procedures, there are a few exceptions to this general rule that allow for special situations. For example, in a few cases where the service volumes for a code are very low the simple average of the converted values is used rather than a weighted average.

Procedure for Determining Common Relative Values ("RV2000s") for Category 2 Codes
As mentioned earlier, each of these codes involves essentially different services that are billed under the same code. Consequently, the Commission has decided to adopt a set of modified approaches for determining the RV2000s for these codes.

<u>For codes that are performed in a hospital in-patient setting only (e.g., 03.03D Hospital Visits)</u>

1. the intra-sectional relative value assigned to the code by each section is converted onto a common scale using the conversion factors (or "exchange rates") developed through the cross-linking procedure;

2. the median of the converted intra-sectional relative values is calculated, and is used to define the general location of the code on the common scale;

3. a modifying factor for each section is calculated as being equal to its Mean Patient Complexity Score (PCS) for the hospital in-patient setting divided by the median of all the sections' PCSs for the hospital in-patient setting;

4. an initial RV2000 for each section is calculated by multiplying the median of the converted intra-sectional relative values by the section's modifying factor;

5. sections are then classified into groups on the basis of the similarity of their PCS scores;

6. the final RV2000 for each section within a group is calculated as being equal to the average of the initial RV2000s for that group; and,

7. the final RV2000s are checked to ensure that no specialists have RV2000s less than that of the section of General Practice. If the RV2000s for a group of specialists is less than the RV2000 for General Practice, that RV2000 is raised to the level of General Practice.

An example helps to illustrate this approach. The code 03.03D (Hospital visits) received intra-sectional ratings from 20 sections. The converted values of their intra-sectional relative values are shown in Table 1. The median of these converted values is 2,632. This gives the central location of the 03.03D code as 2,632, The mean in-hospital PCS for each section is shown in the third column in Table 1, together with the median value of the in-hospital PCS scores (i.e., 4.1489). In the fourth column in Table 1 the modifying factor for each section is shown (e.g. the modifying factor for CARD is calculated by dividing its PCS score, 4.8852 by 4.1489). In the fifth column in Table 1 the initial RV2000 for each section is calculated by multiplying the section's modifying factor by 2,632 (the median of the converted intra-

sectional values). The sixth column in Table 1 shows the final RV2000 that is obtained by averaging the initial RV2000s for each of the groups of sections.

Table 1. RV2000s for 03.03D

SECTION	INTRA-SECTIONAL VALUES CONVERTED TO THE COMMON SCALE	SECTIONAL MEAN PCS	MODIFYING FACTOR	INITIAL RV2000	FINAL RV2000
CARD	3935	4.8852	1.1775	3099	3103
CVT	1556	4.8761	1.1753	3093	3103
NEUR	2982	4.8889	1.1784	3102	3103
VSSG	1538	4.9127	1.1841	3117	3103
PLAS	3002	4.4000	1.0605	2791	2872
PSYCH	2315	4.6734	1.1264	2965	2872
RSMD	4275	4.5072	1.0864	2859	2872
GAST	1746	3.9565	.9536	2510	2591
IDIS	3764	4.1400	.9979	2626	2591
INMD	5230	4.1577	1.0021	2638	2591
NEPH	3546	N.A.	N.A.	N.A.	2591
EM	4220	3.8056	.9173	2414	2398
GNSG	2755	3.8927	.9383	2470	2398
UROL	2034	3.6429	.8781	2311	2398
ANES	1390	3.4800	.8388	2208	2268
OBGY	1262	3.2684	.7878	2074	2268
PED	2509	3.3275	.8020	2111	2268
PHMD	3121	3.6094	.8700	2290	2268
GP	2000	3.5751	.8617	2268	2268
OPHT	1156	N.A.	N.A.		2268
MEDIAN	**2632**				
OVERALL HOSPITAL MEDIAN PCS		**4.1489**			

There are a few important things to note about the rationale underlying this approach. First, the converted intra-sectional values have been calculated using the overall results of the cross-linking process; consequently, they are believed to give a good idea of where, overall, the code fits in with the other visits, consults and procedures. However, the converted values also incorporate individuals sections' (non-validated) opinions regarding the amount of physician resource involved with their members providing these services. Because of the importance of these codes, the Commission decided that a form of external assessment of these opinions was required.

After considering its options, the Commission decided to use the results of Dr. Snider's office visit and consult study as the form of external assessment. Specifically, it was decided to develop the RV2000 for each section by adjusting upwards or downwards from the median of the converted values in proportion to its PCS. The rationale underlying this decision was:

1. although not a direct measure of physician resource, the PCS was believed to be the best available indication of physician resource. In other words, it was believed that sections with a high PCS would tend to expend, on average, more physician resource in providing a service than sections with low PCS. The central assumption being that the more complex the patients, the more physician resource is required to provide them with service;

2. the relation between physician resource and PCS was believed to be approximately linear, in that a section with a PCS of 4 would expend roughly twice the amount of physician resource as a section with a PCS of 2.

The Commission decided against using PCS data on a code-specific basis because of concerns over low sample sizes. As a result, all category 2 codes that are performed in a hospital setting have their RV2000s determined using the same set of PCSs (i.e., the overall PCSs for the hospital in-patient setting).
The grouping of the sections was carried out using a cluster analysis of the PCS data as a guide. The groupings are shown in Appendix 1.

<u>For codes that are performed only in non-hospital-in-patient settings only (e.g., 03.03A Visit not requiring complete history and evaluation)</u>

1. the intra-sectional relative value assigned to the code by each section is converted onto a common scale using the conversion factors (or "exchange rates") developed through the cross-linking procedure;

2. the median of the converted intra-sectional relative values is calculated, and is used to define the general location of the code on the common scale;

3. a modifying factor for each section is then calculated as being equal to its Mean Patient Complexity Score (PCS) for the non-hospital-in-patient setting divided by the median of all the sections' PCS for the non-hospital-in-patient setting;

4. an initial RV2000 for each section is calculated by multiplying the median of the converted intra-sectional relative values by the section's modifying factor;

5. sections are then divided into groups on the basis of the similarity of their PCS scores; and,

6. the final RV2000 for each section within a group is calculated as being equal to the average of the initial RV2000s for that group.

Again an example helps to illustrate this approach. The code 03.03A (Visit not requiring complete history and evaluation) received intra-sectional ratings from 20 sections. The converted values of their intra-sectional relative values are shown in Table 2. The median of these converted values is 1890. This gives the central location of the 03.03A code as 1890. The mean non-hospital PCS for each section is shown in the third column in Table 2, together with the median value of the non-hospital PCS (i.e., 3.4853). In the fourth column in Table 2 the modifying factor for each section is shown (e.g. the modifying factor for CARD is calculated by dividing its PCS score, 4.4771 by 3.4853). In the fifth column in Table 2 the initial RV2000 for each section is calculated by multiplying the section's modifying factor by 1890 (the median of the converted intra-sectional values). The sixth column in Table 2 shows the final RV2000 that is obtained by averaging the initial RV2000s for each of the groups of sections.

Table 2. RV2000s for 03.03A

SECTION	INTRA-SECTIONAL VALUES CONVERTED TO THE COMMON SCALE	SECTIONAL MEAN PCS	MODIFYING FACTOR	INITIAL RV2000	FINAL RV2000
CARD	2072	4.4771	1.2846	2428	2368
CVT	1617	4.2541	1.2206	2307	2368
NEUR	2982	3.7764	1.0835	2048	2062
VSSG	1436	3.8716	1.1108	2100	2062
RSMD	4275	3.7163	1.0663	2016	2062
EM	4630	3.4805	.9986	1888	1903
GAST	1746	3.4646	.9940	1879	1903
INMD	5230	3.5813	1.0275	1943	1903
NEPH	4728	3.4853	1.0000	1890	1903
NUSG	1541	3.5327	1.0835	1916	1903
ANES	1668	3.3151	.9512	1798	1736
IDIS	3226	3.1898	.9152	1730	1736
ORTH	1396	3.1091	.8921	1686	1736
PED	1568	3.1889	.9149	1730	1736
GNSG	2204	2.9250	.8392	1587	1527
OBGY	1262	2.6985	.7743	1464	1527
UROL	2034	2.8201	.8091	1530	1527
PLAS	2771	2.1860	.6272	1186	1186
GP	1500	2.7295	.7831	1480	1480
OPHT	1208	N.A.	N.A.	N.A.	1208
MEDIAN	**1890**				
OVERALL HOSPITAL MEDIAN PCS		**3.4853**			

For all category 2 codes that are performed in a hospital setting the RV2000s are also determined using the same set of PCSs, but in these cases the values that are used are the overall PCSs for the non-hospital-in-patient setting.

The grouping of the sections was carried out using a cluster analysis of the PCS data as a guide. The groupings are shown in Appendix 1.

For codes that are performed both in hospital in-patient and non-hospital-in-patient settings (e.g., 03.08A Comprehensive consultation)

1. the intra-sectional relative value assigned to the code by each section is converted onto a common scale using the conversion factors (or “exchange rates”) developed through the cross-linking procedure;

2. the median of the converted intra-sectional relative values is calculated, and is used to define the general location of the code on the common scale (e.g. for 03.08A the median of the converted values is 7677);

3. for the non-hospital setting, the median of the converted values is used together with the same procedure as that described earlier for codes that are performed in a non-hospital-in-patient setting; and,

4. for the hospital setting, the median of the converted values is first multiplied by the ratio of the median PCS for hospital in-patients (i.e., 4.1489) to the median of the PCS for non-hospital-in-patients (i.e., 3.4853) to arrive at an “adjusted” median value for the hospital setting. This “adjusted” value is then used together with the same procedure as that described earlier for codes that are performed in a hospital in-patient setting. (For example, for 03.08A, the 7677 value is multiplied by [4.1489/3.4853] to arrive at an “adjusted” median value of 9139; the 9139 figure is then taken as the central location for the hospital in-patient setting).

Appendix 1. Grouping of Sections by PCS

For some sections, the patient complexity scores are so close together so as to be virtually the same. As well, from a practical standpoint it would appear unnecessary to have different RV2000s for different sections whose patient complexity scores differ by only a small amount. Consequently, sections were grouped according to their PCS values

For the hospital in-patient setting the groups are:

1. Card, CVT, Neur, Vssg
2. Crcm, Emsp, Nusg, Plas, Psyc, Rsmd
3. Gast, Idis, Inmd, Neph
4. Em, Gnsg, Orth, Urol
5. Anes, Obgy, Ped, Phmd

General Practice was assigned to its own group. Dermatology, Ophthalmology, and Otolaryngology, sections that did not participate in the office visit and consult study, were assigned to group 5 (this produced values for their RV2000s that were higher than their converted values).

For the non-hospital-in-patient setting the groups are:

1. Card, Crcm, CVT,
2. Emsp, Neur, Phmd, Psyc, Rsmd, Vssg
3. Em, Gast, Inmd, Neph, Nusg
4. Anes, Idis, Orth, Ped
5. Gnsg, Obgy, Urol,
6. Plas

General Practice was again assigned to its own group. Ophthalmology, and Otolaryngology, sections that did not participate in the office visit and consult study, were assigned to group 6. Dermatology received its converted value as its RV2000.

Appendix 2. Additional Notes

The codes in Category 2 are 03.03A, 03.03D, 03.04A, 03.04C, 03.07A, 03.07B, 03.08A, 08.19D, 08.19F, and 08.19G.

The Psyc codes, 08.19D, 08,19F and 08,19G, have special groupings. Psyc and Ped have their own groups, all other sections are assigned to a common group. The hospital and non-hospital groupings are the same.

Special Cases of Category I Codes

As stated earlier, for most office visit & consult codes that fall into this category, the RV2000 is the average of the common scale values of all specialties. However, there are several codes that have special procedures for developing the RV2000.

- 03.05C, CN, CR, D, DN, DR, E, EN, ER and F. These codes are equivalent to the office visit 03.03A, but are done in a hospital environment. Each of these codes have a single RV 2000 for all specialties which is calculated as follows:

  RV 2000 = (Median CSV for 03.03A) * (Mean hospital ER PCS/Mean office & clinic PCS)

- For the following codes both a hospital and non-hospital RV2000 is calculated since these services are performed both in hospital and out of hospital. In each case, the non-hospital RV2000 is the RV2000 calculated by the method used for the procedural codes (i.e. the average of common scale values). The hospital RV200s are calculated by taking the non-hospital RV2000 and adjusting by the ratio of the hospital PCS to the non-hospital PCS of the section that primarily performs the code. The calculations are detailed below:

  03.07C: Hospital RV2000 = RV2000 * (Obgy hospital PCS/Obgy non-hospital PCS)
  03.08B: Hospital RV2000 = RV2000 * (Obgy hospital PCS/Obgy non-hospital PCS)
  03.08C: Hospital RV2000 = RV2000 * (Neur hospital PCS/Neur non-hospital PCS)
  03.08F: Hospital RV2000 = RV2000 * (Overall median hosp PCS/Overall median non-hosp PCS)
  03.08G: Hospital RV2000 = RV2000 * (Ped hospital PCS/Ped non-hospital PCS)
  03.08H: Hospital RV2000 = RV2000 * (Overall median hosp PCS/Overall median non-hosp PCS)
  03.09A: Hospital RV2000 = RV2000 * (Ped hospital PCS/Ped non-hospital PCS)
  08.19A: Hospital RV2000 = RV2000 * (Psyc hospital PCS/Psyc non-hospital PCS)
  08.19B: Hospital RV2000 = RV2000 * (Psyc hospital PCS/Psyc non-hospital PCS)
  08.19C: Hospital RV2000 = RV2000 * (Psyc hospital PCS/Psyc non-hospital PCS)
  13.99V: Hospital RV2000 = RV2000 * (Overall hospital PCS/Overall non-hospital PCS)

ARTHUR ANDERSEN

Relative Value Guide Commission of Alberta

Addendum to the Study of physician practice expenses

February 28, 2001

Relative Value Guide Commission of Alberta

Addendum to the
Study of physician practice expenses

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Relative Value Guide Commission of Alberta

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Study of physician practice expenses

1 General

Arthur Andersen LLP (AA) was retained by the Relative Value Guide Commission of Alberta (RVGC) to undertake a study of physician practice expenses.

The results from the study were obtained by performing a survey of medical practice expenses, which were analyzed in order to develop model office expense profiles based on the premise of the "reasonably efficient practice". The results were used to assist the RVGC to incorporate physician practice expenses into the Relative Value Guide (RVG).

The study of physician practice expenses was issued on October 10, 2000 and this addendum should be read in conjunction with the original study.

As part of the RVGC process, the study of physician expenses was circulated to all sections for comments and discussion. As a result of those discussions, certain adjustments were made to the model office practice expense profiles and this addendum discusses the adjustments and provides revised model office practice expenses.

2 Neurosurgery (NUSG) /cardiovascular surgery (CVT)

No survey responses were received for the NUSG and CVT sections in the original survey and no further information was provided by these sections.

These sections were discussed with the RVGC and for the purposes of developing the model office expense profiles, the CVT and NUSG sections were grouped with revised model office practice expense group 5 based on direction from the RVGC.

3 Ophthalmology

As ophthalmology is a medical section which is unique to other practice areas, we were instructed by the RVGC to prepare a model office expense analysis based on the results presented in the "1990 Survey of Income and Overheads" as prepared for the Ophthalmological Society of Alberta by Parry Anderson Chartered Accountants (the Parry Anderson report). We have also performed the necessary inflationary adjustments to restate the expenses to the year 2000.

Approach

We reviewed the Parry Anderson report in order to identify differences in methodology and approach as compared to the survey of medical practice expenses that we recently completed for the RVGC. The following points summarize the results of this comparison. Furthermore, if we had the opportunity to review the Parry Anderson survey results in detail, additional issues may have come to our attention.

Survey sample

The Parry Anderson report states that 34 out of 54 active ophthalmologists responded to the survey. This represents a good response rate (66.7 percent); however, the average costs reported in the survey may not be a good representation of an ophthalmology practice in accordance with the RVG concept of the reasonably efficient practice. The survey sample approach used by Parry Anderson has resulted in higher average expense levels being reported (i.e. because physicians with unusually high incomes and expenses were not removed from the population). This is evidenced by the fact that average expenses are higher than the median levels for most categories.

Therefore, in developing the model office expense profile for ophthalmology, we used the median expenses as reported in the Parry Anderson survey as the median better represents the typical practice as it is not skewed by unusually low or unusually high expenses. The typical practice better represents the reasonably efficient practice concept.

Adjustments

We reviewed each of the expense categories reported in the study in order to identify any items that were inconsistent with the RVG conceptual framework or the survey we performed for the other medical sections. Adjustments were made for the following items: salaries and benefits paid to employed physicians and spousal salaries not at fair market value.

In addition, to recognize that ophthalmologists have a significant investment in equipment, we have provided an adjustment to recognize a notional cost of capital. We applied a blended cost of capital rate of 11.5% (see diagnostic imaging discussion for the basis for this rate) to an average investment of $104,000 per physician to obtain a notional cost of capital of $11,960. We then deducted the actual interest expense reported in the Parry Anderson report ($1,000 inflation adjusted) to ensure no duplication.

We also identified that donation and bad debt expenses should be eliminated; however, the Parry Anderson report did not quantify these amounts other than stating they were not significant. As a result, we have made no adjustments for these items.

The Parry Anderson report also indicated that "other expenses" included the cost of contact lenses with a corresponding "other revenue" in the survey. Given that contact lenses are not funded by Alberta Health, we believe this expense should be eliminated; however, the report does not quantify these amounts. Given that we have elected to use the median expenses, and other expenses were $13,862 in total, it is reasonable to assume this would not have a significant effect on the total expenses for the ophthalmology model office.

In addition, we added back $1,000 CMPA liability insurance as the RVGC has indicated this amount will be paid by all Alberta physicians for the year 2001 and onwards.

Based on the above approach, the total medical practice expenses for the ophthalmology section model office are $217,127 for the 2000 year. These expenses are detailed in the revised model office practice expenses group 9 of this addendum.

4 Diagnostic imaging (DI)

The DI section commissioned their own study (done by KPMG) and, as a result, were not part of the original physician practice expense study. Through discussions with the DI section and the RVGC, it was agreed that the results of the study would be used if the study used similar methodology and had adjustments similar to those as in our study.

Approach

As a result, the RVGC asked that we provide comments with respect to the methodology and results described in the KPMG report entitled Alberta Radiologists' Overhead Survey Report (the KPMG report). The objective was to ensure that the KPMG report was comparable in methodology and considered similar adjustments to the study we conducted for the RVGC for the practice expenses of the various other medical sections of Alberta.

Upon receipt and initial review of the KPMG report in December 2000, we drafted a list of questions for response to clarify certain items contained in the report. We received the responses to these questions in January, 2001. Our comments are based on the report and responses to the questions provided by KPMG.

Upon review of the report, we agreed that the methodology used by KPMG in the analysis and preparation of the KPMG report was very similar to the methodology we used in the conduct of the study of physician practice expenses. The differences identified are discussed below with our comments and recommendations.

Spousal salaries

Many physicians pay spouses and other family members a salary. Some of the salaries are for tax planning reasons while other salaries are for actual services performed. In our study, based on data analysis, we adjusted spousal salaries for the model offices to better represent salaries that would be paid if all employees were third-party employees paid at fair market value. The average allowable spousal salary was $3,595. In the KPMG report $16,000 was reported as spousal salaries. As confirmed in the response to our questions, the $16,000 contained in the KPMG report is mainly for tax planning purposes. An adjustment was made to bring the spousal salaries of the DI section to the same level of spousal salaries allowed in other sections. As there was limited information regarding the breakdown of spousal salaries, we recommended that spousal salaries be adjusted to the average allowable spousal salaries recorded in the model offices in our study. This reduced the spousal salaries in the KPMG report by $12,405.

CMPA dues

The RVGC framework for recovery of physician expenses indicates that CMPA liability insurance will be reimbursed to physicians by way of a fixed payment. The RVGC advised us that in the future all Alberta physicians will be responsible for $1,000 CMPA and therefore each model office should reflect $1,000 in expense. We have allowed an additional $1,000 to the expenses. We do not know where the CMPA dues are recorded as the KPMG report does not detail these expenses. These expenses will have to be removed from the medical practice expenses as these will be reimbursed to the DI section directly.

Cost of capital

Diagnostic imaging is unique in that there is a significant investment in equipment. The cost of this equipment is recovered over time through depreciation charges in the group expense statement. However, this does not consider the cost of capital incurred by radiologists to finance their equipment with internal resources (equity), and the financing costs (interest expense) included in the practice expenses may not be adequate to reflect the true financing costs of equipment.

The KPMG report used a 20 percent cost of capital and assumed that the entire cost of capital was financed through equity.

A 20 percent cost of capital calculation on the assets would appear excessive as you may argue that a group practice could finance 100 percent of the capital cost through the leasing of equipment and therefore, a better measure of capital cost would be the borrowing rate. However, we also agree that leasing may not always be the most attractive option and purchasing equipment may be a more favorable alternative. Also, the practice expenses in the KPMG report do include interest expense which would indicate some form of financing or cost of capital has been considered. We believe a more reasonable approach would be to leverage the assets and calculate a weighted average cost of capital on a notional basis.

1. For a mature radiologist practice with good cash flow, a normal bank loan could be obtained for 80 percent of the capital cost. The remaining 20 percent would have to be financed by equity. Therefore, a blended rate cost of capital reflecting the borrowing rate for the debt portion (80 percent x 9.25 percent) and a rate of 20 percent (used in the KPMG report) for the equity portion would result in a blended rate of 11.5 percent. Applying this blended rate to the average investment as outlined in your report would result in a cost of capital of $205,064 x 11.5 percent = $23,582.
2. As the expenses in your report already contain some cost of capital through interest costs, the actual interest reported of $6,716 ($5,715 group and $1,001 individual) needs to be deducted to ensure no duplication of cost of capital.

Results

The adjusted medical practice expenses, as shown in the revised model office practice expense section of this report (group 8), reflect the above-noted adjustments. After these adjustments, the medical practice expenses for diagnostic imaging have been calculated on a similar basis as medical practice expenses for the other model offices, subject to the removal of CMPA actual dues.

After reviewing our adjustments and comments, KPMG has provided their comments in a letter which has been attached. They are in agreement with the adjustments for spousal salaries and CMPA dues. They have suggested a different approach with respect to the calculation of the cost of capital (point 3 in the letter attached) which would increase the cost of capital by $6,932. We feel that the approach we have used in estimating the cost of capital is reasonable and is consistent with the approach used in other sections. As a result, we have used our adjustment for cost of capital in the revised practice expenses for DI.

5 Psychiatry

The model office expenses for psychiatry were reviewed by the section and discussed with the RVGC. After review of specific data and through discussions with RVGC, it was determined that salaries for the psychiatry section would be increased by $7,900 (prior to inflation) based on direction from the RVGC.

6 Endocrinology/nephrology/physical medicine

In the original study of medical practice expenses, the model office groupings had these three sections grouped into a separate model office. After consultations and discussions between the RVGC and the various sections, we were instructed by the RVGC to include these sections into revised model office practice expenses group 3.

7 Inflation

Approach

The survey results from our physician practice expense study were based on 1998 financial data provided by physicians. As a result, we reviewed each medical expense category and identified an appropriate inflation index in order to adjust each item to 2000. Actual inflation rates were used for 1999 and estimated index rates were used for 2000. The following table indicates the inflation index rates used and the source of each rate:

Medical practice expense	Inflation index	Source – Statistics Canada
Salaries and benefits	Average weekly earnings index	Annual Estimates of Employment Earnings and Hours, Health & Social Services, Alberta, September of each year
Accounting and legal	CPI, Alberta	Consumer Price Index, All Items, Alberta, 1992=100, October of each year
Automobile	Private transportation index	Consumer Price Index, Private Transportation, Alberta, 1992=100, October of each year
Bad debts	CPI, Alberta	Consumer Price Index, All Items, Alberta, 1992=100, October of each year
Interest expense	Business lending rate index	Chartered Business Lending Rate Index, Canada, 1992=100, October of each year
Office rent, maintenance, utilities, other	Rental index	Consumer Price Index, Rent, Alberta, 1992=100, October of each year
Professional and business license/ dues, continuing education	Dues, fees, subscriptions index	Consumer Price Index, Recreation Reading and Education, Alberta, 1992=100, October of each year
Travel	Transportation index	Consumer Price Index, Transportation, Alberta, 1992=100, October of each year
Medical supplies and drugs	Health care goods index	Consumer Price Index, Health Care Goods, Alberta, 1992=100, October of each year
Depreciation and equipment leases	CPI, Alberta	Consumer Price Index, All Items, Alberta, 1992=100, October of each year
Office supplies	CPI, Alberta	Consumer Price Index, All Items, Alberta, 1992=100, October of each year
Billing service bureau, H-Link	CPI, Alberta	Consumer Price Index, All Items, Alberta, 1992=100, October of each year
Locum fees	CPI, Alberta	Consumer Price Index, All Items, Alberta, 1992=100, October of each year
Other	CPI, Alberta	Consumer Price Index, All Items, Alberta, 1992=100, October of each year

An inflation index was not applied to liability insurance (CMPA) of $1,000 as the RVGC has indicated this amount will be paid by all Alberta physicians for the year 2001 and onwards.

The following revised model office cost profiles provide a summary of inflation adjusted medical practice expenses for each model office.

The adjusted expense figures are based on statistical inflation indices, which may not be a precise representation of actual practice expenses for 2000. However, given that the adjusted figures are based on 1998 actual survey data we believe the adjusted expenses are a reasonable approximation of current expense levels for RVG purposes.

We would also recommend the survey data be updated on a periodic basis in order to reflect changes in medical practice expenses over the course of time.

8 Revised model office practice expenses

Model Office Groups	Group 1 ANES EMSP CRCM	Group 2 GP PED	Group 3 INMD NEUR RSMD IDIS E/M NEPH PHMD	Group 4 ORTH OBGY	Group 5 GNSG VSSG UROL NUSG CVT	Group 6 PLAS GAST CARD DERM OTOL	Group 7 PSYC	Group 8 DI	Group 9 OPTH
~~Medical Practice Expenses~~									
Salaries and benefits (Note 2)	$ 24,558	$ 42,949	$ 58,128	$ 55,982	$ 54,440	$ 56,311	$ 27,342	$ 150,392	$ 154,560
Accounting and legal	3,253	1,996	2,336	2,514	2,211	3,781	1,661	3,586	3,717
Automobile	4,613	3,260	3,559	4,086	4,900	3,689	4,441	1,553	5,234
Bad debts	270	44	160	435	828	234	106	164	-
Interest expense	1,464	1,757	846	1,439	694	2,558	1,539	6,716	1,000
Office rent, maintenance, utilities, other	1,992	18,561	10,958	14,266	14,955	17,532	11,142	36,443	34,660
Professional and business licenses/dues	4,616	3,648	5,258	5,105	6,541	4,677	4,856	2,011	5,175
Travel, meals, continuing education	4,769	2,785	2,339	5,142	4,757	6,877	3,604	6,428	4,315
Liability insurance (CMPA)	3,126	1,895	2,342	4,913	2,203	3,926	1,889	-	-
Medical supplies and drugs	303	1,366	818	1,469	1,085	3,112	457	52,804	8,051
Depreciation and equipment leases	1,798	3,254	2,678	4,150	4,913	3,047	2,986	39,459	18,869
Office supplies	2,020	3,679	4,305	3,853	6,065	4,157	2,094	19,271	12,266
Billing service bureau, H-link	414	601	242	144	82	671	1,011	-	-
Locum fees	512	1,019	-	708	-	-	-	-	-
Management fees	324	293	62	37	-	-	-	-	-
Donations	1,611	75	1,657	2,103	18	3,877	189	-	-
Other (Note 5)	7,906	11,402	8,484	16,734	13,181	20,756	3,235	4,070	13,862
	$ 63,550	$ 98,585	$ 104,171	$ 123,081	$ 116,874	$ 135,204	$ 66,553	$ 322,897	$ 261,708
~~Adjustments (Note 1)~~									
Incorporated physicians salaries & spousal salary	$ (17,862)	$ (7,525)	$ (8,427)	$ (10,159)	$ (17,128)	$ (4,327)	$ (3,708)	$ (12,405)	$ (56,541)
Liability insurance (CMPA)	(3,126)	(1,895)	(2,342)	(4,913)	(2,203)	(3,926)	(1,889)	-	-
Management fees	(324)	(293)	(62)	(37)	-	-	-	-	-
Return on investment	-	-	-	-	-	-	-	23,582	11,960
Interest expense	-	-	-	-	-	-	-	(6,716)	(1,000)
Donations	(1,611)	(75)	(1,657)	(2,103)	(18)	(3,877)	(189)	-	-
	$ (22,923)	$ (9,789)	$ (12,487)	$ (17,211)	$ (19,349)	$ (12,130)	$ (5,786)	$ 4,461	$ (45,581)
Adjusted medical practice expenses	$ 40,627	$ 88,796	$ 91,684	$ 105,869	$ 97,525	$ 123,074	$ 60,767	$ 327,358	$ 216,127
Liability insurance (CMPA)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Adjusted Medical Practice Expenses	**$ 41,627**	**$ 89,796**	**$ 92,684**	**$ 106,869**	**$ 98,525**	**$ 124,074**	**$ 61,767**	**$ 328,358**	**$ 217,127**

Note 1: See Arthur Andersen Study of Physician Practice Expenses October 10, 2000, Section 6 for details concerning adjustments.

Note 2: Salaries and benefits for Model Office 7 Psychiatry have been increased by $7,900 (prior to inflation adjustment) based in direction from the RVGC.

Note 3: The figures for Model offices 1 to 7 are based on the 1998 Arthur Andersen survey of medical practice expenses and inflation indices have been applied to adjust the figures to year 2000 levels.

Note 4: The other expense category includes: computer software and maintenance, other liability insurance, GST, advertising and promotion, hospital and clinic overheads and other/sundries. The most significant component included in "other" for most of the group offices is expenses that are shared either in a hospital environment (i.e. overheads allocated to the physician by the hospital) or expenses that could not be categorized by the physician (i.e. related to a shared medical practice).

Note 5: Some rounding differences may exist.

Development of Practice Expense (OH) Multipliers

Practice Expense (OH) Multipliers. Under the RVG, indirect practice expenses are recovered through an overhead multiplier that is applied to each relative value unit generated (note that indirect practice expenses do not include tray and technical fees). Unlike the Human Resource Multiplier, which takes the same value for all sections, the overhead multipliers are developed on a section-specific basis. There are two reasons for doing this. The first reason is that practice expenses vary from section to section (this is reflected in the differences between model office costs as reported in the Survey of Medical Practice Expenses), so naturally the overhead multipliers need to vary from section to section.

The second reason for section-specific multipliers is that the average number of relative value units generated (and hence the rate at which practice expenses are recovered) also varies from section to section. For example, suppose two sections (call them Section A and Section B) have the same practice expenses, but suppose the number of relative value units generated by a member of Section A is, on average, twice as high as the number of relative value units generated by a member of Section B. In order for members of Section A and Section B to each recover, on average, the same amount of practice expenses, the value for Section A's overhead multiplier has to be one-half the value of Section B's overhead multiplier.

Use of Model Office Data. For most sections, the overhead multipliers were derived from the model offices developed as part of the Survey of Medical Practice Expenses. Some sections (for example, Neurosurgery and CVT) did not participate in the Survey and so were assigned to model offices by the RVG Commission. Two sections, Diagnostic Imaging and Ophthalmology had practice expenses developed in alternative means. Practice expenses for Diagnostic Imaging were identified through a second survey that was carried out by KPMG accountants and reviewed for consistency by Arthur Andersen accountants. Practice expenses for Ophthalmology were identified through the analysis of an early survey that was conducted by Parry Andersen accountants and again reviewed by Arthur Andersen accountants.

Development of the Multipliers from the Model Office Data. The following procedure was used to develop the overhead multipliers from the model office data:

1. For each model office, the total tray and technical fees received by the surveyed physicians were identified and were excluded from the total model office practice expenses. Consequently, the model office costs represented only indirect model office expenses.

2. Average indirect expenses for each model office were calculated by dividing the total indirect costs by the number of surveyed physicians included in each model office.

3. For each model office, the average indirect expenses were separated into fixed expenses and variable expenses.

4. For each section, the model office average variable expenses were adjusted to reflect the average Alberta Health payments received by the section. This was done by multiplying the model office average variable expenses by the ratio of the average payments received by the section (less tray and technical fees) to the average payments received by the surveyed physicians in the model office group.

5. For each section, the section-specific average variable expenses were then added to the model office fixed expenses to estimate the section's average indirect expenses.

6. The number of full time equivalent (FTE) physicians for each section was estimated by dividing the total Alberta Health payments received by the section by the median Alberta Health payment for that section.

7. For each section, the total indirect expenses were calculated by multiplying the number of FTEs for the section by the section's average indirect expenses.

8. For each section, the total indirect expenses were then adjusted to 2000 dollars by applying an inflationary factor that incorporates different measures of inflation for different expense items. (The survey data was 1998 expense data; hence the need for adjusting for inflation).

9. The section-specific multipliers were then calculated by dividing the adjusted total indirect expenses for each section by the total number of relative value units generated by the section (less those relative value units that arise from pure technical codes).

Prof. Mark E. Glickman
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Boston University
111 Cummington Street
Boston, MA 02215
USA

November 24, 2000

Dr. Edward J. Mansfield
Arthur Andersen LLP
401 West Georgia St., Suite 2000
Vancouver, BC V6B 5A1
CANADA

Dear Dr. Mansfield,

As you have requested, I have examined your report on the "Method for Creation of the Common Scale" for the Alberta Relative Value Guide. I think the approach of deriving a common scale through links formed between identical or derived services almost certainly has the potential to result in a fair and equitable unified relative value scale. Below are my specific comments on your method.

1. The core of your approach is to minimize a particular objective function with respect to cross-section "exchange rates." As you point out, with D sections, there are D(D − 1)/2 cross section conversions, though with the consistency constraints that need to be imposed this reduces to D−1 freely varying parameters. Instead of considering the objective function to be parameterized by the conversions factors r_{ij} (i.e., the conversion from Section i ratings to Section j ratings), I found it more convenient to reparameterize the function by considering a single parameter for each Section. Letting β_i denote a scale coefficient for Section i, and setting $r_{ij} = \beta_i / \beta_j$, the objective function for a linked pair of services between Sections A and B can be rewritten as

$$S_{AB} = (\beta_A x - \beta_B y)^2 \left(\frac{1}{(\beta_A x)^2} + \frac{1}{(\beta_B y)^2} \right)$$

where x and y are the normalized ratings for identical or derived services in

Sections *A* and *B* respectively. Terms of this form would be summed to produce the total contribution for all linked pairs. In this formulation, *D* parameters (one per Section) are specified. One extra constraint needs to be added. The most natural would be to constrain the product of the β_i to be 1 (or some other postive value). Another would be to set one of the β_i to 1, and let the rest freely vary. Reparameterizing the objective function through the β_i precludes the need for adopting cleer strategies that get around problems associated with combining information from more than two Sections.

While this is a non-standard objective function, I find no immediately obvious flaws. For example, it is invariant the the magnitude of the normalized ratings – if *x* and *y* are both multiplied by the same constant, the same exchange rates will be estimated. An important caveat, however, is that I have difficulty understanding the sampling properties of the estimated β_i (and therefore the conversion rates). This is because the estimated βs are going to be complicated nonlinear functions of the data. I therefore do not understand how the estimated β_i behaves on repeated sampling, except perhaps through simulation. Understanding an estimator's behavior under repeated sampling is crucial before applying it. As an example of the difficulties, I wonder what happens with two linked pairs of services that suggest different values of a conversion factor. How does the objective function weight the contribuition of the two pairs? It is difficult to tell unless simulations are performed.

2. In your procedure, it is unnecessary to normalize the Section ratings by the sample means. These constants are absorbed into the Section conversion values anyway, so there is no need to consider them to have independent significance.

3. I agree with your approach of resolving differences of opinion between two linked services. A volume-weighted average strikes me as a fair compromise. An alternative worth considering is to weight the estimated values by the reciprocal of their variances (that is, the squared standard errors of the estimated values). Sections, that is, Sections with larger number of services in the cross-section linkage procedures will have lower variances of estimated common-scale values, so that their services would have more weight. My suggestion may be difficult to carry out using your method because variances of the estimated conversions are not simple by-products of the algorithm.

Please let me know if you have any questions.

Sincerely,

Mark E. Glickman
Assistant Professor of Mathematics

ARTHUR ANDERSEN

Relative Value Guide Commission of Alberta Health
801, 9940 – 106th Street
Edmonton, Alberta T5K 2N2

February 13, 2001

Dear Sirs:

Re: Dr. Glickman's Review of the Method for Creation of the Common Scale

I have read Dr. Glickman's review of the mathematical methods used for the creation of the RVG Common Scale, and have also had the chance to discuss his findings with him. Without meaning to speak for Dr. Glickman (for his report speaks for itself) I believe it is fair to conclude we are in agreement that the approach followed by the Commission is fundamentally sound and that it should produce reliable results.

In his report Dr. Glickman has made several constructive suggestions regarding ways of re-arranging the objective function so as to express it in a simpler form. These are positive suggestions and I support such efforts to make the mathematics appear less complicated.

Dr. Glickman's report contains a question regarding what he refers to as "the sampling properties of the estimated B_i". Having had the advantage of seeing how the model performs during repeated runs, I can provide the following clarification:

a) the objective function weights all cross-links equally; as a result, the calculated exchange rates produced by the model are similar to the averages of the exchange rates suggested by the cross-links. When two linked pairs of services suggest different values of an exchange rate, the objective function weights the contribution of the two pairs equally;

b) because such a large number of cross-links are used in the model, the results it produces are very stable and are not sensitive to small changes in input data; and,

c) again because of the large number of cross-links, the estimates of the βi are also robust and are not sensitive to small changes in input.

Very truly yours,
ARTHUR ANDERSEN LLP

By
Edward J. Mansfield, Ph.D.
Director of Statistics and Economic Consulting

Peter Braun, M.D., December, 2000

Review of Alberta RVG Interim Report No. 2 – October 2000

Executive Summary

This interim report describes an impressive effort to reform physicians' fees in the Province of Alberta. The work builds on the strengths of previous work in the United States, Alberta, British Columbia, and contemporaneous work in Ontario. Success in this arena requires a two-pronged approach: applying scientific methods with rigor to the public policy question of compensating professionals in medicine, combined with a commitment to group process and the need to channel and resolve conflicts in a constructive way.

The Relative Value Guide Commission of Alberta has made significant advances in the methodology and technical aspects of measuring the resource costs. Notable progress has been made with respect to measuring practice expenses and cross-linking of the services in different sections. The report gives generous attention and weight to the views of individual physicians and the voices of their organizations.

The three sections of the Interim Report (No.2, October 2000) differ in subject matter, authorship, and style. I have therefore chosen in this review to deal separately with each one. The approach in each case is the same: I have sought to highlight their strengths and to point out some areas where each has shortcomings that might be strengthened or clarified. I have also included suggestions for the authors, including comments on presentation and minor editorial matters, that might be considered in future drafts.

Section I (Highlights, Overview, and Full Report) is a well-organized and clearly written road map to the work. The investigators used a sound approach to intra-sectional relative values. The approach used to cross-link the sections' scales makes valuable progress on previous methods of producing a common scale. Section II, Common Scale (Draft) and Study of Physician Practice Expenses contains work by Arthur Anderson Consulting that represents a major and valuable advance in the measurement of physicians' practice expenses. Section III, Alberta Office Visit and Consult Patient Complexity Study, is the most problematic part of the report. In my view it is of limited usefulness and one of its major premises may be flawed. I have included a detailed footnote (endnote) that includes material on the history of this subject that is little known and that may be of interest.

In totality, this project, as reflected in the Interim Reports, deserves the respect and serious attention of those who will also be affected by its results, parties that in large part were significant contributors to the work.

Section I
Highlights, Overview, and Full Report (54pp.)

is a well-organized and clearly written road map to the work. The investigators used a sound approach to intra-sectional relative values. The approach used to cross-link the sections' scales makes valuable progress on previous methods of producing a common scale.

This review deals with the report, section by section, generally following a pattern of making general comments on the section, then pointing out in turn its strengths and (weaknesses) areas that could be strengthened or clarified. Lastly, I have added comments of a minor editorial nature that the authors might wish to consider in future drafts.

Highlights and Overview sections

This part of the report presents a well-organized and clearly written road map to the work. It places the project in the context of previous efforts to produce a relative value guide.

In terms of presentation:

- The overview (p. 5 ff) provides an excellent introduction to the report.
- The use of bulleted lists of points and tables makes for special clarity.
- The table on pp. 6-8 is an excellent format for viewing the work.
- Presenting selected passages at the margin of the pages highlights key points that deserve emphasis.

Suggestion regarding a major policy decision that is not given sufficient recognition.

- Under The Common Scale, Results, first bullet (p. 26), you state that "RVs for procedures were unbundled from visits and consults." The decision on unbundling is, in my view, a major one. It belongs with the highlights at the beginning of the report. It reflects a policy decision (and a constructive one, in my view) that separating payments for visits and consultations from procedures is better than bundling them. It is not a result of analysis or of cross-linking and should not be introduced in a Results section. The decision to unbundle is, rather, part of the model of how best to construct a set of relative values, not a result of analysis. I believe that this policy represents a better policy prescription than the rules in the U.S., where global packages for procedures make for unfortunate rigidity. Use of global payment packages ignores changes in practice, including those taking place when services move from the hospital to ambulatory settings and where different combinations of professionals provide pre-operative and post-operative care.

Suggestion on a minor point

The table on pages 6-8 (and subsequent tables such as that on page 13 etc.…) might be given titles and numbered or lettered as tables.

Full Report

A. Introduction and Background

The use of bulleted lists and the table (p. 13) make the principles, objectives, and structure of the effort particularly clear.

The commitment, cited by the Minister of Alberta Health and Wellness and the President of the AMA, not to remove funding from any section in order to enhance the funding of other sections is significant. It is a major difference between the Alberta effort and that in the U.S., which was implemented in a budget-neutral fashion. This commitment must have done much to reduce the anxiety of many physicians. Having changed from a budget-neutral model to one by which there will be additional funds for those whose relative compensation rises, policy-makers do not know at the beginning how much additional funds will be required at the end of the process. This, as the Commission acknowledges, requires that a phase-in of unknown duration will be needed to implement the changes fully. This is clearly acknowledged.

Some notable strengths of the work include:

- the commitment to involvement of physicians, appointed by their sections, and to group process – with an emphasis on face-to-face communication
- building on previous efforts in the United States and the previous and current effort in provinces of Canada
- conducting original research where proven methodologies do not exist or where there was a need to advance or refine existing methodologies.

B. Methodology

1.1 Intra-sectional relative values

B. Creat(ing) intra-sectional relative values

Strengths

- (p.17) In my view, relying on a global assessment of relative work value, the path the Commission has chosen, is the most desirable way to arrive at estimates of physician's work. The alternative approach, obtaining separate

assessments of the four or five dimensions of work (knowledge and judgement, technical skills, etc.…) presents the very problematic issue of how to weigh these different dimensions and how to combine them. This becomes particularly vexing where the importance of these dimensions (and their weights in quantitative model) differs for different physicians' services and for different specialties. I believe that the implicit weighing of the factors by physicians in providing a global rating is a better approach to the problem. I note that you have added communication and interpersonal skills to the mix, which is appropriate, since it is an important aspect of the physician's role.

- The decision to consider codes representing 85% of dollars billed and 85% of units of service performed indicates the scope of the work done in the sections. That 80% of the health service codes would maintain their current relative value is not surprising; it indicates a reassuring degree of appropriateness of fees within the sections.
- The Commission's decision to assign intra-sectional RVs for non-participating sections based on 1993 RVG relative values strikes me as being fair, at least as a tentative step.

Areas of potential strengthening or clarification

- In the United States, a single service was used in each specialty as a reference standard (given an arbitrary value of 100) for magnitude estimation. The report should make clear what the standard(s) were for the Alberta sections and how they were chosen.
- It would be useful to show examples of the survey instruments and directions that were used to elicit the global relative values. These could be included in an appendix.
- **By what quantitative methods were the survey responses of the physicians who rated services reduced to single values? How were outlier values treated and how were central estimates obtained?** In the U.S. study the responses of approximately 110 physicians in each specialty were analyzed by statistical methods that are described in detail in the various reports and publications. The report should present additional detail on how this part of the work was done in Alberta.
- **In the box on Questions and Answers (p18), the first Answer reads "there is some evidence of systematic overvaluation of services within a section". Since what we have is a set of relative values is it not the case that this implies under-valuation of other services (possibly only the standard or reference service)?** One can not overvalue every service devalues the unit of measurement when one establishes parity across different sections. It might be more accurate to say that there is evidence of overvaluation of some services (and undervaluation of others) in the effort to measure the relative work of different services . **Assuming that some services are over-valued (and others under-valued), by what criteria do the authors assert that there are "systematic overvaluations", since the**

whole exercise involves quantifying (the process of valuation) things that have heretofore been qualitative notions.

B.4 Modeling of the New RVG

You state that the "effect of unbundling procedures from visits/consults adds complexity to the modeling process". To balance this statement you might preface this by stating (as I believe) that unbundling brings greater accuracy and equity to the payment process. Unbundling also allows for greater flexibility as practices change (e.g. the movement to ambulatory surgery) and as different professionals divide the tasks of patient care differently.

1.2 Cross-links to build the common scale

Strengths

- In my view, the Commission's method of first establishing intra-sectional relative values, then selecting and using cross-links is the best way to construct an understandable and robust common scale.
- The use of ratings by multiple participating physicians, using a quantitative scale in surveys, is an important methodologic advance over the method used in the United States.
- The numbers of links (ranging from a minimum of 8 for a section to more than 100 in others should serve to create a robust common scale
- Analyzing cross-links to determine if the range of cross-links covered the majority of services offered by the section is an important step in assuring the quality and equity of the common scale that results. If one were to base the linkage, as an extreme case, on one end of a scale, distortions in the intra-section scale could persist after the linkage process.
- Parenthetically, and in contrast with the Alberta experience using derived cross-links, we found in the Harvard study that our panelists were as likely to consider pairs of "equivalent" services as "same" services to be the same in work.

Areas of potential strengthening or clarification

- The third question is misleading in stating that cross-specialty alignment in the Harvard study was determined through a physician survey process. The methods used in the Harvard study relied on face-to-face discussions within panels of selected physicians (who described the processes followed in their specialty and the kinds of patients they treated) and then their judgement of whether the selected services required the same work in their respective specialties. This is described as the "consultative process for selecting post-survey links" (1) The Harvard study used the results of prior surveys to pre-

select pairs of services (nominally the "same" or not the same service but potentially "equivalent") for consideration in the face-to-face process. "Same" services had the same descriptor and similar times by on surveys in different specialties; "equivalent" services were in the same category (major surgical procedures, endoscopies, consultations, visits) and had similar times by survey. All decisions on linkage were made in face-to-face meetings of and chosen by representatives of the specialties involved.

- It would be useful to show examples of the survey instruments used to elicit judgments regarding the cross-links.
- ***Can you explain (at least to me) how you are able to say (p.20, point 2, third bullet) with respect to removing extreme outliers that "Extreme" outliers arise when two sections have ranked the cross-links very differently within their intra-sectional relative values). If the sections are using different reference servides and if their scales are not at parity, how does one make the judgment that they have been "ranked….very differently"?***
- ***Although I am not a statistician, I find insufficient detail on how the linkage was accomplished.*** As you know, the Harvard linkage was accomplished using a weighted least-squares method, operating on log-transformed values of the ratings of work. Specialty-specific values were weighted by their standard errors, so that those with greater certainty (lower SE) were given more weight. I think that the notion of establishing parity of different currencies is an interesting analogy, and that the selection of points of parity (paired services) is clear. ***It is the detailed method of forming the common scale that should, I believe, be described more specifically.***
- ***By what method (p. 20, Results, first bullet) do the authors determine a "correlation of 0.85" on the relative position of cross-links on the common scale.***

1.3 Visits and Consultations

It is correct to recognize that visit and consult service codes often represent different work for different specialties (sections). There is also considerable variation in the work of these services among physicians within specialties. This is probably one of the most important sources of inequity in payment among physicians. Addressing (and ameliorating or possibly solving) these inequities is an important task but one that is not easy to accomplish.

I will deal in greater detail with this part of the report in dealing with section III. Suffice it to say at this point that my greatest concern is with the nature of the Patient Complexity Scale (PCS) and how it is used in the analytical exercise carried out by the consultant. Although it is nothing of the kind, the PCS almost begins to take on the aura of a quantitative scale of resource inputs (or at least of a scale with a knowable quantitative relationship to physicians' work). That it is not a quantitative scale of work or complexity may be overlooked by the reader

as the statistical relations to it of a large number of observable variables are systematically explored and quantified.

1.4 Other factors considered

The point is well taken that there are factors offsetting income lost with specialty training, including increased salaries for residents than in previous days and higher RVs for many specialists' services and procedures. The small quantities involved and the offsets may well obviate the need and desirability of including offsetting income lost with specialty training in the components of the RVG.

B.2 Practice Expense Recovery

I like the title "Practice Expense Recovery", which aptly describes what this part of RVG aims to do (as opposed to the RVs for physician work, which pay physicians for their services).

- The principles are well-described and are articulated in terms that are easily understood and sufficiently explicit.
- Arthur Anderson's going the route of analyzing the costs of the "reasonably efficient practice" with an efficient service volume and efficient use of inputs is an eminently sensible and tractable approach to the problem of measuring indirect costs. Similarly, employing an accounting firm to perform the study is likewise a good choice.
- Using blinded tax data from Revenue Canada for validation strengthens the study. It is, incidentally, a step that could not be done in the United States.
- The approach of placing most costs in the indirect category and limiting micro-costing to "tray fees" and a "small number of technical fees" strikes me as a good one.

C. Implementation and Maintenance

I applaud the Commission's addressing the issue of implementation and maintenance. Having a good set of relative values will always be a work in progress. I particularly support the notion (bottom of p. 35) that an independent body operating at arms-length from the Alberta Medical Association and Alberta Health and Wellness be a major part of maintaining the RVG. I consider it less than optimal that this has not occurred in the U.S., where the American Medical Association, through its RBRVS Update Committee (RUC), has become the major player in updating of the U.S. Medicare Fee Schedule.

D. Outcomes

D.3 Principles for Review of General Rules

The principles make good sense to me

Appendix

There should be an Appendix, where readers who wish to go beyond the general presentation in the body of the report can find more detailed information on methods, procedures, and other aspects of the work.

Any material on the following (particularly the first four bullets) would be of interest to me.

It would be useful to include

- ***examples of instruments used to obtain physicians' rating of relative values (within section), including cover letters and instructions***
- ***examples of survey instruments used to elicit ratings of the adequacy (scoring) of cross-links***
- ***material giving explicit quantitative/statistical methods used to establish the central values for services on section-specific scales (including decision rules for excluding outliers, etc…)***
- ***material on the explicit quantitative/statistical techniques used to construct the common scale***
- It would be useful under RVG Section Advisors for you to list the affiliations or practice locations of the advisors. On the other hand, you list their telephone numbers and I wonder if they know this and agree to it.

Minor editorial points

Glossary. Minor spelling point. Fourth box on right. Judgment (not judgement) usually preferred.

p. 34 I suggest that you spell out abbreviations where first used (PFT, EMG) for the benefit of those outside the club.

p. 34 second bullet. Use “e.g.” (meaning for example/exempli gratia) in place of “i.e.” (which means that is/ id est), when you give skin testing as an example.

Reference

1. Braun P, Yntema DB, Dunn D et al. Cross-Specialty Linkage of Resource-based Relative Value Scales. Linking Specialties by Services and Procedures of Equal Work. JAMA 260, 23691-2396. 1988

Alberta RVG Report
Section II
(107 pages)

Common Scale

(A personal request)

I would enjoy seeing a "cross-walk" table in which you would pick out key services (perhaps 2 or per section) and compare physician work RVs from the existing Alberta fee schedule, U.S. Medicare Fee Schedule, and the Ontario Fee Schedule (still in progress), normalized for comparison. I believe that the Commission is already doing something along these lines for internal purposes and would love to see it on a confidential basis. This might remain an internal, confidential working document.

A second kind of analysis that would assist one in evaluating this figures, if there are valid data on service time available to the Commission, would be to calculate work/unit time or work RV/unit time and to show these figures in an additional column.

Some strengths/limitations of the code structure of the common scale

- The policy of employing section-specific visit and consultation codes/fees allows you to avoid some of the systematic inter-sectional differences in the work that specialists do. To the extent that the definitions of the services remain non-specific, there remains within-section variability in physician work.
- The coding system avoids the problem posed in the U.S. with a system that uses the same visit and consultation codes, and the same RVs, for all specialties. Following the recommendation of the Physician Payment Review Commission, payment reform followed the principle that there be no specialty differentials for the same service. This required reform of the definitions of codes for visits and consultations (in an effort to provide codes that would reflect equal levels of work) in 1992. This has created new problems as the more detailed definitions of the services are used as "coding guidelines" and as the basis for charges of billing fraud.

Study of Physician Practice Expenses

This portion of the study is based on work done by Arthur Anderson Consulting. I believe that it was a wise decision to engage a major professional accounting/consulting firm to perform this work. Since practice expenses make up a very large share of the resource inputs to health services, analysis by professionals experienced in analyzing and reporting the costs of physicians' services seems to me to have greatly enhanced the quality of the product.

Specific strengths, in my view, include:

- The decision to base the model on efficient practices
- Detailed survey of practices, with financial support to enhance the collection of data with adequate quality
- Cluster analysis to suggest groupings of practices
- the availability of Canadian revenue data for validation purposes (data from the U.S. counterpart Internal Revenue Service were not available to the U.S. researchers)
- paying CMPA liability insurance reimbursement as a fixed payment (p. 16)
- the adjustments of salaries of spouses and family members to fair market value

Other Research Policy Decisions

The Commission had difficult decisions to make with respect to how to handle non-participating sections. For example (p. 12) the sections on dermatology, urology, and otology informed the Commission that their members were not likely to participate in the survey process and Arthur Anderson was able to obtain only one completed survey in each of these sessions. Given what appears to have been a pattern of non-cooperation it seems to me to have been entirely appropriate for the Commission to group these sections on direction from the RVGC. Furthermore, it seems appropriate for the Commission to use alternative means, not specified at this point, to deal with the sections on cardiovascular surgery, nursing, and ophthalmology, which have not been included in any of the model offices.

Areas of Potential Strengthening or Clarification

8 Model Office Cost Profiles

This is a key, bottom-line table. I find it very interesting in the degree to which it differs from current U.S. practice expense allowances, which are not based on the more rigorous methodology performed here. The U.S. data have shown

average practice expenses (as a share of gross revenues) of around 40% and vary little by specialty.

I would find a revision of the Model Office Cost Profiles table of great interest if you are planning to do this or have done so.

This table (which should, in my opinion, be numbered and titled along with all other tables and figures) might show an additional row (perhaps at the bottom) that gives (Alberta Health Care Billings minus total medical expenses). These figures would approximate net income, although they would vary from actual net income (by non-Alberta HCB and errors for variation in years of data acquisition, etc.…). This would necessitate a footnote and explanation in the text.

Methodology

Determination of median values: are these actual median values or were they calculated (as in the U.S. studies) as means of log-transformed values (geometric means), which serve as approximations of the medians?

Precision (text and table on p. 24) I suggest that you number and title this and all tables. (My general comment/advice on tables is given below). The confidence intervals seem generally acceptable, although those for model office groups 7 (PLAS, GAST….etc) and 8 (PSYC) seem fairly large. ***Have the Commission and the consultant considered additional data-gathering to sharpen up the central tendency for these two model office groups?***

What is the statistical method for arriving at the central tendency (Adjusted Medical Practice Expenses column). This should be noted in the column heading or in a footnote).

Minor typographical errors and other comments

p. ii and p. 2 (and perhaps elsewhere) ophthalmology misspelled.

p. 2. I suggest you number and title this and all tables. In general I believe that it is a good principle of writing and editing that each table or figure stand on its own. It is not uncommon for figures and tables to be plucked out of papers and shown, sometimes as slides, by themselves. Then especially, but also in the body of the paper, it is a good idea that each such exhibit be fully understandable without resorting to the related text.

p. 5 I suggest that you number and title all figures (including those on pages 12, 19, I, ii, iii

Pagination. Both the section itself and the appendix begin with pages I, ii, iii …… I suggest that you go to a system of unique pagination.

p. 7. Typo. Second bullet, practice

p.8 I suggest that you spell out AA (at least at first use on this page) and GST (lower set, second bullet). I'm sure they are very familiar to most Canadians, but spelling them out will make the text friendlier to readers from outside.

p. 12 abbreviate ophthalmology as OPHT

P, 13 revenue categories. Spell out WCB

p. 17. very minor syntax point, but following **Home Office Expenses** "The costs…….office" is a run-on sentence. "However" should begin a second sentence.

p. 20 second paragraph. First sentence should read "The adjusted data **were** then aggregated….." since data is a plural noun (datum/data).

Appendix A. Pie charts on pages i, ii & iii. It is very difficult to follow the keyed colors in the tiny boxes to the pie chart segments (and will be impossible when the figures are copied in black and white). The figure would be improved if you could label the pie segments directly. It might be necessary to drop the percentage or perhaps put one or the other into the pie segments.

Table on p.22 (row for adjusted medical practice expenses) and first column of figures in table on p. 24. There are minor (last digit) differences in the figures given for several of the clusters, perhaps due to rounding, but the figures should match.

Alberta RVG Report
Section III
(119 pages)

Alberta Office Visit and Consult Patient Complexity Study

This is the most problematic part of the Interim Report. In my view it is of limited usefulness and one of its major premises may be flawed. I have included a detailed footnote (endnote) that includes material on the history of this subject that may be little known.

The issue of relating patient complexity to resource input (physician work).

The Commission contracted with Earle L. Snider, Ph.D., Professor Emeritus in the Population Research Laboratory, University of Alberta, to perform this study. Dr. Snider gave a considerable amount of personal attention to the task, including meeting directly with the physicians whose practices were to be surveyed, to explain the purposes and methods of the study. He clearly immersed himself in the study and endeavored to produce a fuller description of the different tasks that physicians perform.

This central issue in a critical assessment of this paper is how the patient complexity scale (and the correlates of the scale that Dr. Snider identifies) relate **quantitatively** to physician work and to this portion of an RVG. ***What is the patient complexity scale and what does partial correlation with this scale (through potentially auditable variables) mean? What evidence is there on the relationship of the scale to physician work?*** In reviewing this paper I have tried to address these questions.

A review of the "argument" presented in this study

This is not an easy report to understand or to evaluate. That is, it is not simple to follow the various logical assumptions and inferences that are made. The "argument" of the paper is not laid out explicitly. It is left to the reader to follow exactly what is being done. With some degree of reservation, for Dr. Snider is in a different disciplinary field and I may be mistaken, I will describe what I think the line of argument is.

As I can best understand this paper, a rough road-map of the study is as follows:

1. Validation of inter-observer agreement (pp. 14-18 and Table 1). 268 Physicians in 29 sections scored six case histories on the Patient Complexity Scale with a high degree of agreement.

2. Having established that physicians in different specialties score written case histories similarly, Dr. Snider proceeds by having physicians use the Patient Complexity Scale to rate actual patient encounters.

3. The patient complexity scale values in over 15 thousand visits and consultations show a mean value of 3.31 and are roughly normally distributed over the 6-valued scale. The paper shows how the scores are distributed for all specialties, primary care, and specialists only (tables 14, 15, & 16, p 88) for AhCIP-billed patients only (chart 1, p89) and by specialty (table 17, p 91). These patient complexity scale values (PCSV) are one side of the process.

4. The other side of the analytic process is collection of data on a large set of variables describing the patient-physician interaction. This is central to the effort to find a smaller set of objective variables that are correlated with the Patient Complexity Scale. These variables in turn are grouped within the following 9 categories.
   - the patients: demographic contexts, including patient age and gender
   - the patients: medical contexts, e.g., new patient, first visit, and new problem
   - the physicians: specialist status, years since graduation, etc.…
   - the work: site-specific factors, e.g., medical service site
   - the work: medical services provided, e.g. chart review, history, examination, advice, separate referrals, etc…
   - the work: required communications, e.g. visit/consult oral communications, written communications
   - the work: medical decisions, e.g., hospital admission
   - the results: time required
   - the results: billings

5. Through a process of iterative steps of statistical analysis Dr. Snider eliminates variables that are not independent of other variables. This reduces the large set of variables in the 9 categories to eight independent "final variables" (Table 25). The final variables explain a little less than 40% of the variance in patient complexity score values (PCSV). They are (in order of importance): total MD time, in-patient status, number of secondary diagnoses, specialist, age, supervisory care, patient gender, new problem.

6. In the Conclusions section (VIII), Dr. Snider states that patient complexity is a "measurable, reasonable, and practical basis for at least partial restructuring of a relative value guide for Alberta physicians." Physician time (including pre- intra- and post-encounter times) explains 13.4% of all variance and 35.3% of explainable variance (the <40% of all variance that is explainable) in PCSV. Inpatient status explains 8.95% of all variance

and 23% of explainable variance. Number of secondary diagnoses explains 8.84% of the variance and 23.3% of explainable variance. Dr. Snider states that these three factors- time, inpatient status, and number of secondary diagnoses- could be properly subject to audit.

The Bottom Line of the Analysis

This has been a complicated analytic journey. We are informed that three potentially auditable variables explain **31.2%** of the variance in patient complexity score values. Dr. Snider suggests that these three variables might be used in billing and payment.

The Problem of Application

In a resource-based relative value system of payment, however, we aim to pay in proportion to resource input costs. In the case of visits and consults we would like to measure physician work, the relevant resource input. How do the patient complexity score values (the PCSV scores of1-6) relate to work and how should should they relate to payment? The complexity scale (and its close counterpart, the CPT "Instructions for Selecting a Level of E/M Service) are not quantitative scales of physician resource input. What is the quantitative relationship of the ordinal 1 to 6 scale to physician work inputs? The question is not answered. The complex journey has correlated three variables of patient encounters with an ordinal "patient complexity" scale whose relationship to physician work is unknown.

Dr. Snider's concludes (no. 5 or p 118) that patient complexity levels served and current levels of physician remuneration do not match (as argued from tables 31, 32, and 33). Payment may well relate poorly to this scale. However, the scale is not a measure of physician work (in the sense that the ordinal levels 1 to 6 are quantitative measures of work) nor does it purport to be. The analysis does not tell us how physicians should be remunerated.

Additional reservations and comments

Dr. Snider suggests that the number of secondary diagnoses on billing claims is potentially auditable and, presumably, a stable and objective feature of physician-patient encounters. I would caution that the number of secondary diagnoses put on physicians' claims could easily become the subject of gaming and "coding creep" if and as physicians (and their billing consultants) discover that these diagnoses have become a determinant of payment.

Total time is also subject to physicians' decisions, but the exact functional relationship of payment and time could neutralize or even penalize spending additional time (conversely, rewarding more visits of shorter time).

Presentation

Dr. Snider approached his task with commitment and energy, meeting directly with the physicians whose practices were to be surveyed, to explain the purposes and methods of the study. He clearly immersed himself in the study and endeavored to produce a fuller description of the different tasks that physicians perform. All of this is described in detail in section II. In my opinion, the report would read better if some of the material (e.g., 11 on p.29 Letter from Lead Investigator to Physicians Actually Selected to Participate…..through 14 Individual Meetings with Study Physicians, p 31.) were moved to an appendix and briefly cited in the body of the report. This material describing his efforts no doubt helps a reader to appreciate the time and energy that the investigator has expended and to evaluate the internal validity of the research, but is not necessary for the decision makers and others who are interested in the results of the investigation and their implications. I believe that the section on methodology, which also contains both history of this study and the pilot study found on pp. 3 – 28, could be condensed considerably with an overall benefit to readability of the paper.

Likewise, Section C., on the Research Climate (where the investigator addresses the matters of how busy physicians are, and the need to involve Alberta physicians in solution of the problem of "relative value") demonstrates Professor Snider's sensitivity to the subjects of his work (an essential ingredient of success in this arena), but is probably not essential to the report. Similarly, Section D (p. 36) detailing causes of delays, demonstrates an attention to detail but is not essential to the main line of explication of the report. I believe that the readability of the report would be improved if much of this material were moved to an appendix, to footnotes or to endnotes.

Table 17 (p. 91). I believe that this table would be of more use if the specialties were sorted in order of descending mean PCSV, rather than alphabetically. I, for one, am interested at looking at which specialties have the most complex encounters (to those with the least) without having to search through all the values in the "mean" column. I look to see if the values are plausible, to me as a clinician and health care researcher, as one means of evalutating the method used to rate complexity. Does mean complexity of 4.15 for psychaitry seem reasonable, for example, compared with 2.87 for urology, 3.52 for general internal medicine, or 4.62 for thoracic surgery?

Minor typos and editorial comments

Table 23 (p.99). Is there any point to expressing the Chi-squared values (which are enormous and seven of which are significant to $p < 0.0000$) to eight significant figures (including four figures to the right of the decimal point? I believe that no information would be lost if they were expressed to the left of decimal point only.

I am not familiar with p values of 0.0000. Is there a finite non-zero p value to the right of the digit shown?

Tables. How many significant figures are reasonable? For example, is it meaningful in table 25 to show Beta values to six significant figures? The same question could be asked for other tables (e.g. mean and S.D. presentation in table 26).

Endnote

[i]The elements used in the Patient Complexity Scale (shown in Appendix B) do not, incidentally, appear to be entirely the invention of Dr. Snider, but bear a strong resemblance to those used in the matrix developed in the United States for determining the level of evaluation and management (E/M) services. In the U.S. system (CPT) the descriptors for the levels of E/M service comprise seven components, six of which are used in defining the levels of E/M service. These components are:

E. History
F. Examination
G. Medical decision making
H. Counseling
I. Coordination of care
J. Nature of presenting problem
K. Time

Comparing the CPT system for determining the level of E/M code and Dr. Sinder's matrix for determining patient complexity:

CPT	Professor Snider's PCSV
Identify category and Subcategory of service (office/hospital, new/ established, consultative status)	Chief complaint severity (6 levels)
Extent of History Of data to be reviewed Obtained (4 levels)	Nature of history required (6 levels)
Extent of Examination Performed (4 levels)	Physical examination requirement (5 levels)
Complexity of decision Making (4 levels)	Decision making complexity (5 levels)

There are further instructions in the CPT system that explain the terms used at the different levels. That is, CPT defines one of the four levels of history as follows: detailed – chief complaint; extended history of present illness; extended system review, pertinent past, family, and/or social history. ***Although there may be such materials to illuminate the PCSV, no materials were available to me***

As to what "detailed" history means in Dr. Snider's system, although there may be such information. Similarly, while in the U.S. system there are published decision rules for classifying the level of visit when the pieces do not fit the combinations described for each level of service, there is no information here on how physicians were supposed to rate complexity when the elements of the four components did not fit neatly to one of the combinations in the 6 levels of Dr. Sinder's scale.

Most importantly, the Alberta RVG Commission should understand that, although the matrix shown above has been for determining the level of service for visits and consultations in the CPT system, there is no basis for it in empirical evidence. I know this not only because I was a consultant to the CPT editorial committee when these guidelines for selecting level of service were written, but because Bart McCann, M.D. and I drafted them at the behest of that committee. Although the Harvard analysis of survey data showed that physicians' estimates of intra-service time predicted 90% of the variance in their ratings of work (ref.1), the CPT editorial board was firmly opposed to using time as a determinant of the levels of CPT code. Analysis of data from actual visits confirmed the primacy of time in the assessment of physician work in office visits (2,3). The descriptions of history-taking, extent of physical examination, level of decision-making were pure guesses that Dr. McCann and I made by scanning the vignettes (e.g. "43 year-old male with hypertension and weakness poorly controlled on a thiazide drug") and trying to figure out what typical physician might do. With no data, by a process of "reverse engineering" we guessed what 15 minutes of service for such a patient might entail. We knew that different medical problems (other vignettes) might well entail different actions by the physician and that not all good physicians did things the same way. Moreover, there were no data in 1990-1991 on what physicians did in such encounters (only what was in our heads) and no data have been developed since then that relate these determinants of levels or service or the decision rules for using them to physician work. The only variable with any proven relation to physician work in the U.S. CPT system is intra-service time. (the work values and payments are geared to the total times associated {based on data} with the "typical" intra-service timed identified at each level of service.)

Unfortunately, the matrix (sans time) used for selection of level of service, have morphed into "coding guidelines" by which bills are now judged to be justified or not, and further have become a basis for prosecutions of fraud in the United States. (4, 5). This is a sad and regrettable outcome for physicians, because the guidelines very likely are paralleled in only a fraction of useful physician-patient encounters. They are not, in my opinion, a description of what good physicians do or should do and, if followed routinely, would like be a major waste of time and effort and an impediment to good care, which remains difficult to codify. (6) It would be doubly unfortunate, given what has occurred in the United States, if the present study of office visit and consultation complexity were to lead the Alberta RVG commission to make the same mistakes.

2 Braun P, Dernburg J, Dunn DL et al. Predicting the work of evaluation and management services. Medical Care 30: NS 13- NS 27, 1992

3 Lasker RD and Marquis MS. The intensity of physicans' work in patient visits- implications for the coding of patient evaluation and management services. N Engl J Med 341: 337-341, 1999

4 lezzoni LI. The demand for documentation for Medicare payment. N Engl J Med 341: 365-167, 1999

5 Brett AS. New guidelines for coding physicians' services – a step backward (Sounding Board). N Engl J Med 339: 1705-1708, 1998

6 Kassirer JP and Angell M. Evaluation and management guidelines – fatally flawed (Editorial) N Engl J Med 339: 1697-1698, 1998

7 Braun P and Dunn DL. Reimbursement for evaluation and management services (Letter to the Editor) N Engl J Med 341: 1619-1620, 1999

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Extent of Examination Performed (4 levels)		Physical examination requirement (5 levels)
Complexity of decision Making (4 levels)		Decision making complexity (5 levels)

There are further instructions in the CPT system that explain the terms used at the different levels. That is, CPT defines one of the four levels of history as follows: detailed – chief complaint; extended history of present illness; extended system review, pertinent past, family, and/or social history. Although there may be such materials to illuminate the PCSV, no materials were available to me as to what "detailed" history means in Dr. Snider's system, although there may be such information. Similarly, while in the U.S. system there are decision rules for classifying the level of visit when the pieces do not fit the combinations described for each level of service, there is no information here on how physicians were supposed to rate complexity when the elements of the four components did not fit neatly to one of the combinations in the 6 levels of the Snider scale.

However, most importantly, the Alberta RVG Commission should understand, although the matrix shown above has been adopted as part of the CPT system (and specifically for determining the level of service for visits and consultations) that there is no basis for it in empirical evidence. I know this not only because I was a consultant to the CPT editorial committee when these guidelines for selecting level of service were devised, but because Bart McCann, M.D. and I drafted them at the behest of that committee. Although the Harvard analysis of survey data showed that physicians' estimates of intra-service time predicted 90% of the variance in their ratings of work (over hundreds of vignettes of E/M services) the CPT editorial board was firmly opposed to using time as a determinant of the levels of CPT code (1). Analysis of data from actual visits confirmed the primacy of time in the assessment of physician work in office visits (2,3) The descriptions of history-taking, extent of physical examination, level of decision-making were pure guesses that Dr. McCann and I made by looking at the vignettes (e.g. "43 year-old male with hypertension and weakness poorly controlled on a thiazide drug") and trying to figure out what a typical physician

might do. With no data, by a process of “reverse engineering” we guessed what 15 minutes of service for such a patient might entail We knew that different medical problems would (different vignettes) might well entail a different approach by the physician and that not all good physicians did things the same way. Moreover, there were no data prior in 1991 on what physicians did in such encounters (only what was in our heads) and no data have been developed since then that relate these determinants of levels of service or the decision rules for using them to physician work. The only variable with any proven relation to physician work in the U.S. CPT system is intra-service time. (the work values and payment are geared to the total times associated (based on data) with the “typical” intra-service times identified at each level of service.)

Unfortunately, the matrix (sans time) used for selection of level of service, have morphed into “coding guidelines” by which bills are now judged to be justified or not, and further have become a basis for prosecutions of fraud in the United States. (4, 5). This is a sad and regrettable outcome for physicians, because the guidelines very likely are paralleled in only a fraction of useful physician-patient encounters. They are not, in my opinion, a description of what good physicians Do and, if followed routinely, would like be a major waste of time and effort and An impediment to good care, which remains difficult to codify. (6) It would be doubly unfortunate, given what has occurred in the United States, if the present study of office visit and consultation complexity were to lead the Alberta RVG commission to make the same mistakes.

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6 Braun P and Dunn DL. Reimbursement for evaluation and management services (Letter to the Editor) N Engl J Med 341: 1619-1620, 1999

Response of the Commission to the Report of Dr. Braun, the Response of Dr. Snider, and Letters from Sections Regarding the Office Visit and Consult Patient Complexity Study

The Commission would like to thank Dr. Braun for his thorough and constructive report regarding the Office Visit and Consult Patient Complexity Study (the "study"), Dr Snider for his review and response to Dr. Braun's report, and also those sections that have provided comments regarding the methodology used in the study and on the study's results.

The Commission has carefully considered the issues discussed in the reports, responses, and letters. In weighing the arguments of all sides of these issues, the questions the Commission has had to consider are:

1. Are there errors or deficiencies in the study?

2. If errors or deficiencies exist, to what extent do they limit the applicability of the study's results? and,

3. Do alternatives exist to the results of the study and/or the manner of their application that would produce an improved measure of physician resource or more reliable relative values?

The existence of errors or deficiencies

Difficulty of the Task

The Commission recognizes that it is very difficult to design a study that attempts to quantify the relative amounts of physician resource that are required to perform office visits and consults. Moreover, because of the differing views among physicians regarding what constitutes physician resource, the Commission recognizes the near impossibility of designing such a study in a way that would fully satisfy all interested parties. In engaging Dr. Snider, it was not the Commission's goal to obtain "the perfect measure" of the physician resource required to perform office visits and consults. Rather, it was the Commission's goal to obtain reliable data that would lead to an improved method for determining the relative values of office visits and consults.

The PCS Data

The Commission believes that the manner in which the Patient Complexity Score ("PCS") data were collected is essentially sound. The Commission believes that while improvements could be made in the design of the study should a similar study be undertaken in the future, the collected data nonetheless provides a reliable measure of the average complexity of patients seen by Alberta physicians. The Commission believes the PCS data are representative in terms of the types of physician practices that are present within the sections, and in terms of the types of patients to whom office visit and consult services are provided.

The Commission recognizes that some specific concerns have been raised over the mechanics of the data collection process used to collect the PCS data. While these concerns appear to be based on firm theoretical grounds, it is evident that they do not affect the outcomes of the study in any material way. In

the Commission's view, these concerns may best be described as questions of academic purity, rather than questions of practical significance.

Sample Size Concerns for the Hospital In-Patient Setting

The Commission believes that deficiencies in sample size for the hospital in-patient setting may exist for a small number of sections. As a result, there is a possibility that, for these sections, the hospital in-patient PCS data collected during the study may not provide a reliable measure of the PCS data that one would have found for the section as a whole. These sections are identified in the Commission's previous reports, and the Commission has taken appropriate actions to ensure they are not adversely affected by the small sample sizes.

Concerns Regarding Regression Analyses Contained in the Study Report

Dr. Snider's report contains many regression analyses that are not directly related to the way in which the PCS data were collected or to the manner in which the Commission used the data. The Commission recognizes that concerns exist over these analyses; however, since these analyses do not relate to the determination of relative values, the Commission believes their resolution is best addressed in other forums.

The extent to which any errors or deficiencies limit the applicability of the study results

The Principles That Underlie the Commission's Use of the Study Results

To assess the extent to which any errors or deficiencies limit the application of the study's results it is necessary to first review the key principles that underlie the manner in which the Commission has chosen to apply them.

The first principle is the belief that the PCS data provide the best available measure (albeit an indirect one) of the relative amounts of physician resource required to perform office visits and consults. The Commission has considered in depth the arguments and counter-arguments regarding this issue. The Commission recognizes that there are many components of physician resource, and that there are various factors that affect each component. The Commission accepts Dr. Snider's position that patient complexity is an important factor that affects all components of physician resource. The Commission believes that the higher the average PCS score, the more physician resource, on average, is required to perform office visits and consults. (This is not to say that in each case a patient with a high PCS score will require more physician resource than a patient with a low PCS score, only that, on average, one would expect patients with high PCS scores to require more physician resource than patients with low PCS scores.)

The Commission recognizes that time is a central component of physician resource, and understands the desire of some sections to use time alone as the basis for determining relative values for office visit and consults. However, the Commission believes that the use of time alone is not appropriate, as other components must also be taken into account. The Commission accepts Dr. Snider's argument that time is, to a certain extent, a result of patient complexity. Moreover, the Commission accepts Dr. Snider's argument that other components of physician resource are also affected by patient complexity.

Consequently, while the Commission accepts that PCS data are not the "perfect" measure of physician resource, the Commission believes they are the best measure currently available.

The second principle underlying the Commission's use of the study results is the belief that the sample sizes are not sufficiently large to develop code-specific PCS scores. Several sections have expressed disappointment that code-specific PCS data could not be utilized to develop the relative values. The Commission agrees that using code-specific PCS data would have been desirable. However, the Commission investigated this possibility thoroughly and concluded that the sample sizes obtained in the study did not allow for PCS data to be used reliably at this level.

The third principle underlying the Commission's use of the study results is the belief that the PSC data are best used as a means to adjust office visits and consult codes upwards or downwards from a central location on the Common Scale that is determined through the cross-linking process, rather than as a means of establishing the position of the codes directly on the Common Scale. A limitation of the study is its ability to relate physician resource requirements for office visits and consults to the physician resource requirements for procedural services. Consequently, while the Commission believes the PCS data can be used as a method for establishing "within code" relativity for the office visits and consults, the Commission does not believe the PCS data can be used to establish the relativity of office visits and consults to procedural services.

Effect of any Errors or Deficiencies on the Applicability of the Study's Results

As stated earlier, the Commission believes the PCS data are essentially sound. Consequently, the Commission believes errors or deficiencies in the study do not significantly affect the first principle underlying the use of the study's results.

As stated earlier, the Commission believes the sample sizes are not large enough to allow for code-specific PCS data to be used. As also noted earlier, the Commission believes that deficiencies in sample size exist for the hospital in-patient setting, and has taken appropriate remedial actions. As a result, the Commission believes the second principle underlying the use of the study's results remains fundamentally sound.

The Commission believes errors or deficiencies in the study do not affect the third principle underlying the use of the study's results.

In summary, the Commission has concluded that errors or deficiencies do not significantly affect the applicability of the study's results.

Existence of alternative methods for applying the results of the study

The Commission has thoroughly investigated suggestions of alternative methods for applying the results of the study, and has concluded that no proposed alternative method produces an improved or more reliable measure of physician resource. The Commission believes that the measurement of physician

resource is a topic of ongoing importance and supports further research efforts in this area; however, the Commission has concluded that no currently available method is superior to the one followed by the Commission.

Summary and Conclusions

Since its inception, the Commission has believed that the RVG should, as much as possible, be "data-driven" by the best available data. In saying this, the Commission recognizes that the best available data may not be perfect. As well, the Commission recognizes that the application of the data will rarely be free of debate. The Commission believes this is the case with the results of Dr. Snider's study. However, the Commission believes that the PCS data collected by Dr. Snider are fundamentally sound, that the manner in which the study's results have been used is the most reliable method currently available and that together the data and the method of application represent a significant improvement over previous methods for determining the relative value of office visits and consults.

Comments on Evaluation of Alberta RVG Interim Report No. 2 October 2000

By Dr. Peter Braun MD

Response by: Dr. Earle Snider PhD

My response to this evaluation is specifically narrowed to my effort, Section III, Alberta Office Visit and Consult Patient Complexity Study. This response is also restricted to major substantive issues.

Dr. Braun considers my effort to be "the most problematic part of the Interim Report" and "of limited usefulness". Obviously I disagree. There are some critical issues Dr. Braun evidently did not have the best opportunity to properly understand, in part because of the very general nature of my report. A primary concern is that Dr. Braun has missed patient complexity being the basis for physician intervention, the "driver" for understanding intra-sectional and inter-sectional inequities.

Proper discussion is a better, preferred route to resolve our differences but in the absence of such a vehicle I would like to assure the Commission that the effort and its potential applications are not seriously flawed.

1. The "Problem of Application". Dr. Braun's concerns here flow from his orientation and/or preference regarding a resource-based relative value system of payment. While this approach has been quite popular and adopted for example in Ontario, it was not the limited orientation adopted by the Alberta Commission or the Patient Complexity Study. The history of the issues in Alberta are marked by a concern for a broader view of payment inequities within and between sections however generated in order to offer more informed resolutions.

The misunderstanding here leads Dr. Braun to question the quantitative relationship between patient complexity rankings and physician work inputs. I would have thought the potiential tie was obvious: the work done by a physician in office vist and consult situations is **the patient**.

The types of effort/work required of the physican are (indeed should be) generated solely because of the patient's medical problem(s). No patients…no work.

Dr. Braun is therefore correct that the assumption underlying this research (and all the previous effort in this regard by the Alberta Medical Association) are patient medical needs. Patient complexity is indeed not viewed as an input variable and/or measure of physician work intheis research but rather the dependent variable against which the various inputs (physician efforts to help mediate/resolve the complexities) are evaluated.

For example, rather than consider estimated time in its own right, the research established which of nine time measures was the most meaningful (based on statistical significance and other substantive issues) and utilized that measure ONLY as is as relevant to the patient complexities at hand. The research stands properly accused if the argument might be that physician time should be counted even if it was truly unrelated to work, i.e., work performed unrelated to the potential resolution of patients' medical problems of varying complexity.

"What is the quantitative relationship of the ordinal 1 to 6 scale to physician work inputs? The question is not answered." This must simply be an error in that the bulk of the report demonstrates quite clearly how those inputs relate to patient complexity. Nearly fourty percent of the statistical variance in patient complexity scale scores was explained, remarkable in work assesment research. This is actually quite an achievement given the number of medical sections participating, the probabilty sampling procedure and the response rate achieved.

2. This Issue of Payment. Dr. Braun is correct that the report does not state specifically how physicians should be remunerated. That was not my task and peoperly belongs with the Government of Alberta and the Alberta Medical Association. However, the report does clearly underline (Table 30, p. 109 for example) the extent of financial resources necessary if physician remuneration should be based, at least in part, on the type/level medical difficulties encountered during office visits/consults.

3. Secondary Diagnoses. It should be noted that Dr. Braun did not question the medical relevance of secondary diagnoses in terms of their relevance to required physician efforts. His concern is that this variable might be subject to gaming and/or coding creep.

I remind readers that the secondary diagnoses included by study physicians (p. 77) were restricted to only those secondary diagnoses actually worked up during that particular visit/consult. It would not include diagnoses carried forward from a pervious visit and/or work conducted by other medical personnel. The narrow definition is more likely to suggest potential billing fraud to physicians, thereby minimizing the concerns otherwise properly raised by Dr. Braun.

4. Time. The concern raised is justified: could the "exact functional relationship of payment and time…neutralize or even penalize spending additional time (conversely, rewarding more visits of shorter time)"? Clearly this an issue for wide-ranging debate outside the report.

My thought at this point is that Dr. Braun's concern would be justified if time alone became "the" basis for remuneration. The report clearly shows such a payment strategy is not justified, at least because time and patient complexity (or any other measure of required work for that matter) do not correlate perfectly or even close to it. Further, both mean values and especially standard deviations within and between sections varied considerably.

5. Table 17. The concern here is whether the mean patient complexity scale values of the different sections appear "reasonable". This is essentially a common-sense test. A good point.

Bearing in mind that the focus here is visit/consult work and the morbidity/mortality bias to the patient complexity scale, the data appear valid. For example only, visits/consults in Psychiatry where the patient was suicidal were more highly scaled and justifiably so. Similary, patients do not (should not) visit a specialist in Cardiovascular or Thoracic Surgery because of a minor viral infection. On the other hand, visits in General Practice were evidently not as commonly driven by a life-threatening acute condition.

6. The Current Procedural Terminology (CPT). Level of evaluation and management (E/M) services are informed by a number of factors many of which were replicated in this study. Dr. Braun was unable to properly evaluate the current project because he did not have all the background work and evaluation completed by a number of committees of the Alberta Medical Association. I am comfortable that their work was proper and it has been validated a number of times.

The more serious, analytical issue is Dr. Braun's concern that there is no empirical evidence for "determining level of service for visits and consultation in the CPT system". This is problematic, at least in part, because the approach is based on physician estimates of intra-service time. Such estimates can be wildly inflated as has been learned in comparing real Alberta times with the "average patient" estimates generated by the Ontario RBRVG.

Of course there is and should be no surprize when such subjective ratings predict 90% of the variance in physician work ratings. Subjective assessment of a subjective assessment of these types would be expected to highly correlate. The primary role of time as it relates to physician work is not surprising either where work requirements are evaluated by something other than patient medical needs, i.e., complexity. Dr. Braun's preference might simply produce an open door to Parkinson's Law, time expanding to fill the tasks available.

Again, the only real issue here is the dependent variable. The present research properly and deliberately removed all statistically related independent variables from the regression analysis having established as the dependent variable a factor which is (and likely should be) the basis for the patient-physician relationship work required, patient complexity.

7. Outcome for physicians. Dr. Braun properly laments the sad and regrettable outcome for physicians in the US given work evaluation stategies adopted and their potential for fraud prosecutions. This research and the approach generally of the Commission are something very different and positively so. The differences should be better understood and obviously more effectivey communicated.

Comments on Evaluation of Alberta RVG Interim Report No. 2 October 2000

By Prof. Mark Glickman

Response by: Dr. Earle Snider PhD

Prof. Glickman has restricted his evaluation primarily to statistical matters consistent with his interests With the exception of a early single sentence, his evaluation is entirely and, in my opinion, unjustifiably negative compared with Dr. Braun's more informed positive or negative substantive comments.

1. The general data set. I concur completely with the need for further reflection and data analysis. It would be unforunate if the large and unique data base are only visualized in the form of one report. A number of sub-analyses appropriate for peer-reviewed academic journals are warranted.

I do not agree that "the data analysis and the conclusions he draws from the study are ultimately incorrect and potentially misleading". This is a rather general criticism which is neither further elaborated or substantiated under this point. It is hard to fight a "ghost".

2. Vignettes. Prof. Glickman is concerned about the absolute evaluation of the vignettes employed, an approach very much substantiated in academic literature. I perhaps glossed over the previous AMA research from which the vignettes were drawn. A physician "jury" established the absolute or correct scores. A variation of "1" was permitted for exactly the reason Prof. Glickman specified. Further, the case histories were a validation technique to determine the reasonableness or common-sense test for the patient complexity scores determined by physicians for actual patients. Readers should consult pages 87 to 91 in this regard.

3. Sampling. There are two general types of sampling procedures, probability and non-probability. Only the former permits generalization from those data bases to the populations

from which they are drawn because, in part, probability samples require that every element of the universe have an equal, non-zero chance of selection into the sample. Our systematic sampling is an example of a probability sample frame: all elements (here physicians in different medical sections) are listed separately and only once per list with a computer-generated sample procedure being applied to each list.

Non-probability samples are not the same thing and do not, therefore, afford the same, primary advantage of being able to generalize from the sample to the population. Accidental samples, purpose samples, focus groups, samples generated/made up of volunteers and <u>any</u> sample where the refusal rate exceeds 15% are examples.

It would be discourteous to debate Prof. Glickman's choice of words here further. The only important point here is that this research was conducted to ensure generalization would be possible. There is absolutely no statistical doubt in this regard.

Prof. Glickman is correct on the unit of analysis for research being individual physicians. Inter-sectional comparisons are used where warranted. Number of patients will of course vary, a function of visit/consult patient volume within sections/specialties. However, the focus of the report was intended to be inter-sectional differences not intra-sectional variation or patient differences.

A final point raised here is that most visits/consults "were clustered within one week, and most of the surveys were carried out during the same time of the year" therefore minimizing somehow the representativeness of the data base. The justification for this statement is not contained in the report and is a perfect example of unjustified negativity in the evaluation.

Data collection occurred over nearly a one-year time frame with <u>no</u> section completing its data collection effort during the identical time period. Additionally, and more to the point even if all physicians had magically completed data collection during the identical one-week period, all physicians were required to specify in advance that the data collection period employed <u>and</u> the patients presenting during those research periods were <u>both</u> representative of their individual practices. I cannot imagine a finer blend of science and reality! Points 5 and 7 on page 41 confirm my interpretation here.

4. The final eight variables. Prof. Glickman is concerned that the final reduced-form equation was ad hoc. Not withstanding the application of other statistical routines might produce (somewhat) different findings, the report—albeit only in summary for—does indeed explain the statistical, substantive and common-sense rationale for the variable-reduction process in each data section as well as the reduction from thirteen to eight variables in the final regression equation.

If fact, variious multi-variate analytical techniques were applied including Lisrel (Dr. L. Hayduk is a very gifted consulting colleague in this regard). The discussion is not included in the report since it is relevant to more academic discussions of the data analyses.

I had to make a decision about the report being "readable" for most diverse parties. That does not mean, however, that the results presented are thereby somehow wrong, unjustified and/or misleading.

A variable removed through variable reduction process was for reasonable statistical cause. It is correct that an independent variable removed might have or even does have a strong statistical relationship with the dependent variable. But two or more strongly related independent variables cannot remain together in the prediction of the dependent variable for reasons explained in countless statistical textbooks. Dr. Glickman surely knows and should admit as much. It is important to note when this exclusion occurs and which remaining variable(s) are now also representative of which now excluded variable(s). I did so, time after time.

I am in complete agreement, however, with Prof. Glickman's final point here that the potentially more unique and/or complex relationships between variables for each specialty taken separately might be more revealing. The Commission is already aware of this situation at least in part because of the results of a number of special data runs undertaken since this report was originally submitted.

5. Causal effects. Prof. Glickman's concern here is the possible assumption that increasing the level in one of the independent variables will, by definition, cause an increase in the dependent variable. He cites time as an example here in its relationship with patient complexity. It happens to be the case, however, that generally speaking and across all specialties/sections, time increases are indeed statistically associated with increases in patient

complexity! Did the former “cause” the latter? I will admit to a possible poor word choice but there is no doubting the strong linear relationship and the absence of spurious or intervening variables to otherwise explain the statistically significant relationship all not withstanding the substantial supportive literature in this regard. Indeed, we have no other reasonable explanation.

6. Prof. Glickman’s final point is a cause for concern, in that he raises the last issue as being the most “crucial”. I am at a loss in knowing howing to politely respond. It is apparently somehow unclear to him that patient complexity is a valid and well-recognized aspect of medical service delivery and a basis for evaluating the quality of good medical care. Additionally, he asks that certain variables be analyzed in a manner that, for this most crucial issue, was actually the basis for the entire report!