

A critical review
of the Final Report
of the General Practice Coding Jury

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SUMMARY OF REVIEW

The Final Report of the Coding Jury and any decision based on it, should not survive scientific or public scrutiny. The Jury has inexplicably introduced a systematic bias in its assessment method and this is compounded by significant omissions, subtle inaccuracies and misinformation.

The Jury was given the task of “recommending to the General Practice Computing Group (GPCG)... the most suitable **coding system** or coding systems for use in Australian general practice in the future” (*Report p.6*).

The report demonstrates the Jury’s confusion between the concepts of classification, coding, interface terminologies and reference terminologies. In particular, “classification” and “coding system” are used interchangeably throughout the document. This has led to confused assessment of attributes of each system, some of the assessed products being coding systems, some classifications, and some reference terminologies. The Jury aimed to select a coding system. It has instead recommended a **classification system** (ICD10AM) designed to classify hospital morbidity and mortality, and does not have an interface terminology that would allow its use as a coding system in general practice clinical settings.

The selection process appears to have been undertaken in isolation, there being no review of the international trends in general practice coding and no report of the current situation in Australia.

The implementation issues were ignored in selecting a “coding system” and are addressed only lightly in terms of the introduction of the recommended system (ICD10 AM). Yet issues of implementation have strong implications for the acceptability of the recommendation to adopt ICD10 AM in general practice in Australia.

ICD10AM is a system designed for the classification of morbidity managed in the tertiary and secondary health sectors and of causes of death. ICD has been demonstrated to be unsuitable for general practice, failing to satisfactorily classify about 40% of the problems managed by GPs. Further, it appears that the vision is to inflict it on Australian general practitioners without testing its acceptability, reliability or validity. Is general practice willing to accept a theoretical recommendation such as this without a reality check?

Adoption of the current recommendation for ICD10 AM as the standard classification (it is not a coding system) in general practice in Australia would:

- ◆ put Australian general practice totally out of step with international trends in general practice (47 countries use ICPC in 35 languages)
- ◆ be expensive and time consuming (as the Jury admits, it has no interface terminology as yet developed and needs general practice terms added to it)
- ◆ take too long and be available for only a short time before the recommended move to SNOMED (the report suggests this move in five years time)
- ◆ be unacceptable as a language for general practice
- ◆ have an unsatisfactory structure for general practice (ICD and its very structure have been rejected almost world wide for general practice)
- ◆ have a detrimental impact on continuity of data in general practice, splitting the past decade’s data in ICPC-2 from those gained in the next five years in ICD10 AM, and splitting again in five years time with the move to SNOMED. Trends in morbidity and management would be impossible to measure across the three time periods.

Following is:

- ◆ A clarification of definitions used loosely in the report
- ◆ A summary of the major points and examples of the inaccuracies and misinformation.
- ◆ A review of the impact of the introduction of ICD10 AM on current data collection programs
- ◆ Recommendations for future action and an outline of an alternative solution

DEFINITIONS OF TERMS USED LOOSELY IN THE REPORT

There appears considerable confusion regarding the use of words such as code, classification, terminology, interface terminology and reference terminology. For the purpose of this discussion the following definitions are used:

- Code: the numeric or alphabetic representation of data for the purpose of communication or computer processing. (after *Last*)
- Classification: the systematic arrangement of similar entities on the basis of certain differing characteristics (*Dorland*).
- Terminology: the vocabulary of an art or science (*Dorland*)
- Interface terminology: a terminology which is classified or mapped to a classification +/- a reference terminology.
- Reference terminology: A defined list of all approved terms for describing and recording observations. (after *Last*)

The function of these different entities may vary according to the circumstances in which they are used. Some coding and classification systems may fulfil more than one of the above roles. An interface terminology, a reference terminology and a classification are all essential components of any system used for concept representation in the health industry.

In general, interface terminologies consist of words, phrases, abbreviations, acronyms and synonyms used by a relatively homogeneous group of clinicians to represent the concepts encountered in their discipline. They contain duplicate terms and synonyms to allow for the differences in language use between members of the group. Terms in an interface terminology are generally coded but not inherently classified. All terms in an interface terminology should be classified in a single classification system. Interface terminologies are essential for reliable coding.

Reference terminologies contain a generally large set of unique defined concepts which relate to a number of interface terminologies and classifications. The terms in the interface terminologies may have a many to one relationship to the concepts in the reference terminology and may be grouped in the reference terminology in relation to their concepts. The concepts in a reference may be classified by many classification systems and will generally have a many to one relationship to the higher level concepts in the classification.

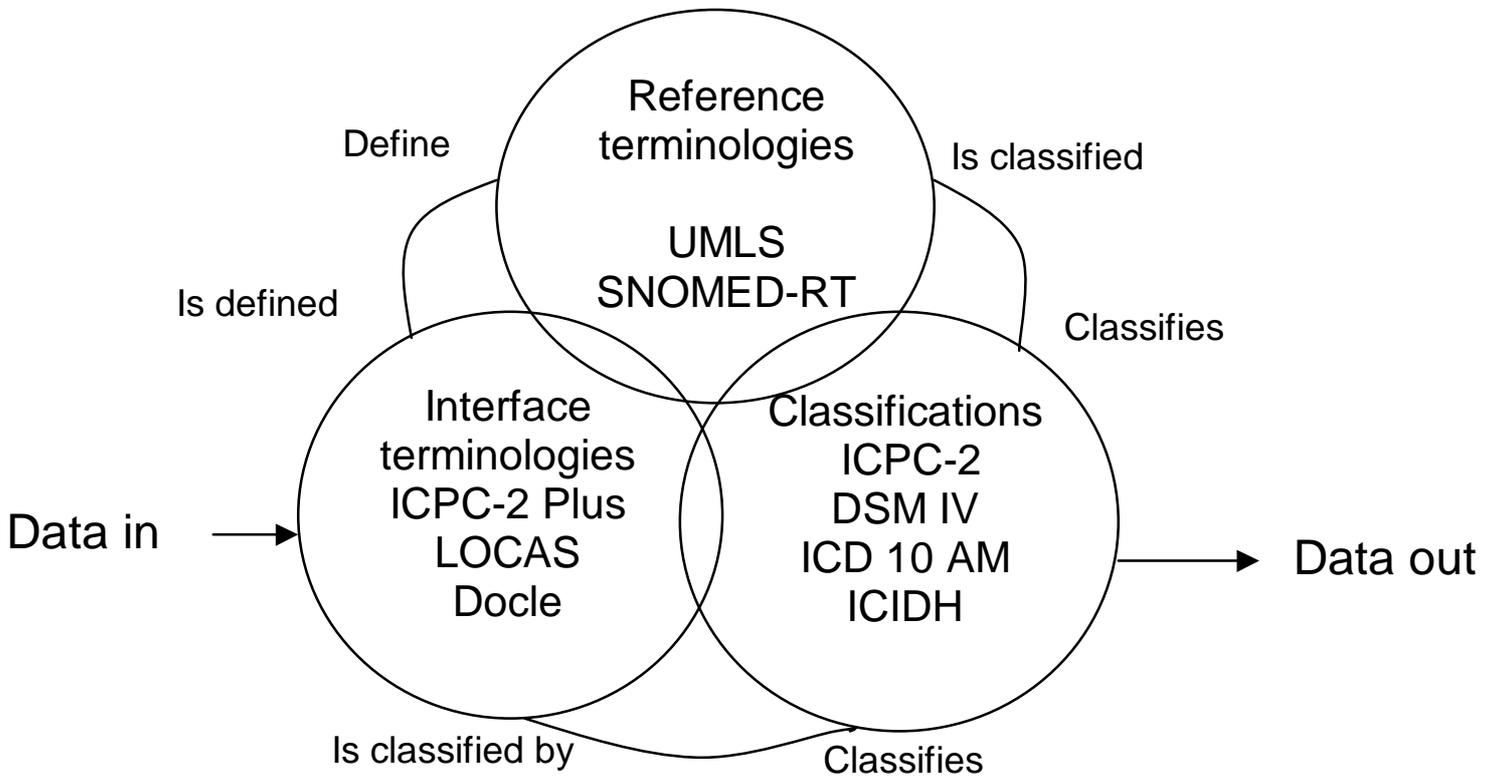
Classifications are designed to group data according to rules designed to assist reporting or processing of data for specific needs. Classifications may group terms or concepts from both interface terminologies and reference terminologies. As with interface terminologies, classifications may not have defined concepts and may need to relate to a reference terminology to facilitate concept definition.

With the above definitions in mind the Table presented in the Jury report on page 23 has been corrected and is presented below.

| Vendor | Reference Terminology | Interface terminology | Classification (<i>reporting terminology</i>) |
|--------------------------------|-----------------------|-----------------------|---|
| ACBHS | | | ✓ |
| DOCLE | | ✓ | |
| ICD 10 AM | | | ✓ |
| ICPC-2 | | | ✓ |
| ICPC-2PLUS | | ✓ | ✓ |
| SNOMED/Cyber+LE ^(a) | ✓ | ✓ (US) | |

(a) Note that Cyber-LE has SNOMED embedded in it, (just as ICPC-2 PLUS has ICPC-2 embedded). It cannot be judged separately from SNOMED. Note also that Cyber-LE was not listed as a system to be assessed.

The relationship between interface terminologies, reference terminologies and classifications is illustrated in the figure shown on the next page.



1. SIGNIFICANT OMISSIONS

1.1 There is no statement as to the intended purpose of coding.

Understanding the objective of clinician coding is basic to the assessment of available systems. It must be recognised that GPs will only code if it is useful in the clinical care of his/her patient. Further, data retrieved by the clinician or at a higher level (eg: Divisions) will be far more reliable if this is the case, than if the coding is enforced for secondary purposes.

The Jury has put great weight on the purpose of transfer of information between health sectors in an era when no facilities are available or planned for specialist and hospitals to primarily code and transfer such coded data to GPs or to be able to "read" coded data sent to hospitals. Considering that GPs would need to code about 300 problems and equivalent reasons for encounter for every one referral to hospital, this weighting appears overpowering. There is also negligible consideration of the usefulness of the code for the clinician, the Divisions, SBOs or the DHAC

1.2 The comparative assessment of available system is made outside the context of general practice.

National general practice based data activity and the international trends in general practice coding and classification are not considered.

1.2.1 There is no literature review of the international situation

This allows the Jury to make a recommendation totally opposed to international trends without informing the reader that this is the case.

The report therefore does not include some important basic facts:

- ◆ that general practice universally rejected ICD in 1972 and then rejected even its structure in 1983 through the World Organisation of Family Doctors
- ◆ that ICD10 is used in primary care in only two countries: Sweden (in Swedish) and for secondary coding by US National Centre for Health Statistics (in this case with the additional use of the Reason for Visit Classification. ICD alone was found to be insufficient)
- ◆ that ICPC-2 is being used in primary care in at least 47 countries in 35 languages
- ◆ that international results of validity and reliability of ICD both in hospital systems and in primary care (invalid, unreliable) or the reliability and validity results for ICPC. Over 250 references were provided to the Jury pertaining to ICPC-2.
- ◆ That SNOMED is not yet being used in general practice anywhere in the world.

1.2.2 There is no consideration of the current situation in general practice coding in computerised general practice clinical systems in Australia

This allows the report to stand outside any consideration of the impact of the recommendations on current clinical practice and on National data collection programs.

It fails to report that the following programs use ICPC-2 PLUS:

- ◆ BEACH (Bettering the Evaluation And Care of Health: Continuous National data collection in general practice).
- ◆ Commonwealth Department of Veterans' Affairs (DVA) Health Care Plans
- ◆ Australian Bureau of Statistics (ABS) Health Surveys 2001 and 2004
- ◆ RFDS National data collection program
- ◆ Northern Territory Health (in community care).

It also fails to report that:

- ◆ ICPC-2 PLUS is currently being used in four computerised general practice clinical systems by more than 1,000 practicing GPs.
- ◆ DOCLE is being used in one clinical system by an estimated several thousand GPs.

1.3 Selective exclusion of criteria in assessment of available systems

In selecting the criteria for comparison of systems the Jury chose **NOT** to include

- ◆ Acceptability to general practice
- ◆ Current usage in Australian general practice
- ◆ functionality of coding systems at the interface
- ◆ Complexity of implementation

1.3.1 Acceptability to general practice

In Appendix 3 in "Classification priorities" (page 59) "acceptability to general practice" was voted "by the public"¹ to be top priority (scoring 10 points)

In the same appendix the top priority score in "Terminology set priorities" was given "by the public" to "acceptability to general practitioners in the clinical environment".

Yet the jury chose not to assess the systems on this basis. If ICD is acceptable to general practice why is not currently being used in the major computerised clinical systems currently available throughout the world?

ICD10 has been almost universally rejected for general practice across the world during the past 30 years. As in New Zealand when it was introduced, Australian GPs will be likely to refuse to use it after a first try. If general practitioners will not use the chosen system the standard will fail.

1.3.2 Current usage in general practice

Again, this places the recommendation on an island. No Government decision of this size can be made in ignorance of the current environment. The potential impact of a decision must first be considered.

Current coding system usage in general practice:

- ◆ Internationally
 - ◆ ICPC-2 (+/- local extensions) would win hands down
 - ◆ ICPC-2 PLUS would follow second
 - ◆ ICD10 would come third.
- ◆ Nationally
 - ◆ DOCLE is most widely used followed by ICPC-2 PLUS.

Further, the report fails (even in the brief discussion of implementation of ICD10 AM) to recognise the need to map current systems to the chosen system so that current records can be updated for continuity of care.

1.3.2 Functionality in computerised clinical systems in general practice

Ignoring functionality of the systems under consideration allows the report to down-play the amount of work and money required to turn ICD10 AM into a functional software interface language and to **not report** the fact that DOCLE and ICPC-2 PLUS are already functional, well developed and in use in general practice clinical systems across Australia.

1.3.3 Implementation.

Omitting consideration of implementation issues the Jury did not have to consider time lines and costs in comparative assessment. This is related to the previous dot point. More discussion about implementation issues associated with the introduction of ICD10 AM is included later in this review.

In summary, by selectively ignoring acceptability, current functionality, current use in Australia, overseas practice and implementation (see above), a clear bias has been introduced in the comparison of available systems.

¹ Also note that the "public" referred to are seven respondents. How many people were given the opportunity to comment? Were there any open advertisements inviting people to submit a view on either the priorities or on coding systems? If the "public" was only offered the opportunity through selective mail approach, on what basis were these people selected and how many were approached?. Were the respondents external to the Coding Jury?

2. MAJOR METHODOLOGICAL FLAWS

2.1 Split assessment of ICPC-2 and ICPC-2 PLUS

A systematic bias occurred in the comparative assessment of available systems in that ICPC-2 PLUS was not assessed as a combined coding system/classification. This ensured that while assessment of ICD10 AM included consideration of the advantages of its stem ICD 10 (eg: international comparability), ICPC-2 PLUS was not assessed with the advantages of its stem, ICPC-2.

Example: *Criterion 4.8: Mapping/links: international comparability*

Jury ranking: ICPC-2 = rank 1
ICPC-2 PLUS = rank 4.

Yet ICPC-2 is an extended vocabulary of terms, coded and classified to ICPC-2.

In contrast, when assessing ICD10 AM (rank 3), the report states “the ICD10 base of the classification gives it international comparability.

The same must be said of ICPC-2 PLUS (ie. the ICPC-2 base of ICPC-2 PLUS gives it international comparability)

At no time did anyone suggest that the interface terminology of ICPC-2 PLUS should be used without its stem, the International classification of Primary Care (ICPC).

The format of the report makes it is difficult to gain an overview of the rankings given by the jury for each criterion. Table 1 provides a summary of these rankings drawn directly from the report.

Table 1: Summary of the rankings given by the Jury for each criterion

| | | SNOMED | DOCLE | ACBHS | ICD10 | ICPC-2 | ICPC-2 PLUS |
|--|---------------|--------|-------|-------|-------|--------|-------------|
| Criterion | Jury priority | Rank | Rank | Rank | Rank | Rank | Rank |
| 4.1 Hierarchical representation | Low | 1 | 2 | =3 | =3 | =5 | =5 |
| 4.2 Reliability and validity | Medium | =2 | 5 | 6 | =2 | 4 | =1 |
| 4.3 Granularity | Very high | =1 | =1 | 4 | 3 | 6 | 5 |
| 4.4 General practice sub-set available | Low | 5 | =1 | 4 | 6 | =1 | =1 |
| 4.5 Availability Education & support | Low | =5 | =5 | 4 | 1 | =2 | =2 |
| 4.6 Maintenance-Rapid & responsive upgrade | High | =4 | =2 | =4 | 1 | 6 | =2 |
| 4.7 Mapped to hospital/specialist systems | High | =3 | =5 | 2 | 1 | =5 | =3 |
| 4.8 International comparability | Medium | 2 | 6 | 5 | 3 | 1 | 4 |
| 4.9 Concepts described in Aus GP language | Very high | 6 | 2 | 5 | 3 | 4 | 1 |
| 4.10 Includes concepts for diagnoses, symptoms, RFEs | Very high | 3 | 1 | 5 | 2 | 6 | 4 |
| 4.11 Availability of computer files | High | =1 | 6 | =1 | =1 | =1 | =1 |

In Table 2, ICPC-2 PLUS has been considered as the combined product it is. Where ICPC-2 was ranked higher than ICPC-2 PLUS, the higher rank given to either system has been adopted as the rank of ICPC-2 PLUS because PLUS must contain the advantages of ICPC-2 and overcomes some disadvantages of ICPC-2. This means that sometimes one of the other systems had an adjusted rank (eg: =2 to =3).

Table 2: Result of comparative assessment of ICPC-2 PLUS incorporating ICPC-2

| | | SNOMED | DOCLE | ACBHS | ICD10 | ICPC-2 | ICPC-2 PLUS |
|--|---------------|--------|-------|-------|-------|--------|-------------|
| Criterion | Jury priority | Rank | Rank | Rank | Rank | Rank | Rank |
| 4.1 Hierarchical representation | Low | 1 | 2 | =3 | =3 | =5 | =5 |
| 4.2 Reliability and validity | Medium | =3 | 5 | 6 | =3 | =1 | =1 |
| 4.3 Granularity | Very high | =1 | =1 | 4 | 3 | 6 | 5 |
| 4.4 General practice sub-set available | Low | 5 | =1 | 4 | 6 | =1 | =1 |
| 4.5 Availability Education & support | Low | =5 | =5 | 4 | 1 | =2 | =2 |
| 4.6 Maintenance- Rapid & responsive upgrade | High | =4 | =2 | =4 | 1 | 6 | =2 |
| 4.7 Mapped to hospital/specialist systems | High | =3 | =5 | 2 | 1 | =5 | =3 |
| 4.8 International comparability | Medium | 3 | 6 | 5 | 4 | =1 | =1 |
| 4.9 Concepts described in Aus GP language | Very high | 6 | 2 | 5 | 3 | 4 | 1 |
| 4.10 Includes concepts for diagnoses, symptoms, RFEs | Very high | 3 | 1 | 5 | 2 | 6 | 4 |
| 4.11 Availability of computer files | High | =1 | 6 | =1 | =1 | =1 | =1 |

2.2 A mathematical consideration of the Jury’s priorities and rankings.

The Jury went to the trouble of giving a priority level for each of their selected criteria. However, these priorities were not considered in combination with the rankings.

Using the priorities provided by the Jury, a mathematical calculation of the results of the Jury's Rank x Priority is provided below.

A ranking of 1 was given by the Jury for the product thought best at satisfying the measure. A low rank is therefore a positive result. To keep uniformity with the concept of “Low score” = “best” in the ranking, a low score was allocated to those measures given highest priority by the Jury and a high score to those with a low Jury priority such that:

- ◆ Very High 1
- ◆ High 2
- ◆ Medium 3
- ◆ Low priority 4

In Table 3, for each criterion the rank position has been multiplied by the priority score to give a score in each cell. These scores were then added for each product to produce a total score against all criteria. Thus the final “winner” should result in the lowest overall score (low being “best”).

From Table 3 (next page) the results indicate that the order of preference using the priorities of the Jury should have been:

1. ICPC-2 PLUS (score 77.0)
2. ICD 10 AM (score 81.5)
3. ICPC-2 (score 93.0)
3. SNOMED (score 97.0)
4. DOCLE (score 101.5)
5. ACBHS (score 111.0)

Table 3: Final scores resulting from corrected rank x Jury priority for criterion

| Criterion | Jury Priority | Weight | SNOMED | DOCLE | ACBHS | ICD10 | ICPC-2 | ICPC-2 PLUS |
|--|---------------|--------|-------------|--------------|--------------|-------------|-------------|-------------|
| 4.1 Hierarchical representation | Low | 4 | 4 | 8 | 14 | 14 | 22 | 22 |
| 4.2 Reliability and validity | Medium | 3 | 10.5 | 15 | 18 | 10.5 | 4.5 | 4.5 |
| 4.3 Granularity | Very high | 1 | 1.5 | 1.5 | 4 | 3 | 6 | 5 |
| 4.4 General practice sub-set available | Low | 4 | 20 | 8 | 16 | 24 | 8 | 8 |
| 4.5 Availability Education & support | Low | 4 | 22 | 22 | 16 | 4 | 10 | 10 |
| 4.6 Maintenance- Rapid & responsive upgrade | High | 2 | 9 | 5 | 9 | 2 | 12 | 5 |
| 4.7 Mapped to hospital /specialist systems | High | 2 | 7 | 11 | 4 | 2 | 11 | 7 |
| 4.8 International comparability | Medium | 3 | 9 | 18 | 15 | 12 | 4.5 | 4.5 |
| 4.9 Concepts described in Aus GP language | Very high | 1 | 6 | 2 | 5 | 3 | 4 | 1 |
| 4.10 Includes concepts for diagnoses, symptoms, RFEs | Very high | 1 | 3 | 1 | 5 | 2 | 6 | 4 |
| 4.1 Availability of computer files | High | 2 | 5 | 12 | 5 | 5 | 5 | 5 |
| Total score | | | 97.0 | 101.5 | 111.0 | 81.5 | 93.0 | 77.0 |

2.3 Assessment for each criteria is usually made outside the context of general practice:

Example 1: Higher granularity is seen as an advantage. Yet high granularity of disease codes would (except when coding a specialist diagnosis) be seen as a disadvantage in general practice. Granularity is measured only in terms of diagnoses not in terms of (for example) symptoms and complaints that form a large part of general practice problem labels.

Example 2: Granularity in the context of general practice:

We assume from the section on implementation that some sort of index of terms will be developed from the current ICD10AM index so that GPs can enter a term and be led to the correct code.

An index is not an interface terminology. It is limited in the extent to which it covers terms used in general practice --the terms in the current index will be those required by secondary coders in the hospital system. Further, the specificity is often not available in areas of interest to general practice. A few examples follow.

- ◆ The GP wishes to record ***“insomnia”*** (the index will offer the choices of “organic’, inorganic’ or ‘primary”). Let us assume the GP selects “primary” This will lead to the allocation of code F51.0. The label to be stored in the record will be ***“Non organic insomnia”***. This is not too bad though it is not a term the GP would usually record in the clinical record.
- ◆ The GP wishes to record ***‘claustrophobia:*** The index leads you to F40.2: Specific (isolated) phobias. There is no specific code for the claustrophobia so in the patient record, the GP will have ***“Specific (isolated) phobias”*** recorded as the patient’s problem. ICD has **classified** the term requested – it has not provided the concept of “claustrophobia” with a specific code which allows the storage of that term.
- ◆ ***“Fainting”*** leads to R55- the label is “Syncope and collapse” –this effectively prevents GPs labelling a concept accurately in their own terms.

There are many examples of this grouping effect, particularly in the codes allocated for “other diseases of the ... system” and particularly in the area of symptoms and complaints – an area representing a large proportion of a GP’s clinical contacts. Clearly this is unsatisfactory for continuity of care, for legal coverage etc.

Example (2): A large number of hierarchical levels is seen as an advantage in the report. Are five or seven hierarchical levels useful in a general practice setting? The international rejection of ICD10 and its structure and the adoption of a far simpler hierarchy in ICPC- would indicate that having a large number of hierarchical levels is NOT seen as an advantage in general practice.

Example (3): 4.10 “required concepts are represented... .”

The question is “required” - by whom and for what purpose? Certainly ICD10 AM does NOT include a large number of concepts described by GPs. This is demonstrated by the fact that only about 1500 of 6,800 ICPC-2 PLUS terms (terms derived from over 1 million encounter records from Australian GPs) have a direct map through UMLS to an ICD10 AM concept.

2.4 Assessment of coding jury compliance with jury requirements.

In Appendix 5 (p67) The report describes the process whereby each “vendor” was asked to code 67 terms. These terms were “obtained from the most common terms listed in the BEACH report and.....” .

Since the BEACH report is a data output, many of the common terms listed are groups of terms (ie: the terms used by GPs have been “classified” and grouped where necessary for reporting purposes) rather than specific terms recorded by the GPs and specifically coded as such the database. If GPs were to be confined to using output terminology (ie classification labels) their medical records would be of little clinical use.

On page 68 a chart is provided which purports to compare each system by indicating “the number of codes able to be coded either specifically, or in general by each vendor.” First it is unclear what this means. Secondly, this is a meaningless graphic. What does it mean? What number of “codes” were offered for “coding” in each category?. What proportion of each type could be coded “either generally or specifically” by each system? Is “either generally or specifically” now sufficient, even though granularity earlier appeared to be a major factor?

3. INACCURACIES AND MISINFORMATION

Many of the statements made are incorrect. A few examples are presented below.

Example 1. Who are the vendors?

The report suggests that the vendor of the International Classification of Primary Care (version 2) is the Family Medicine Research Centre (not *Unit* as suggested in the report), University of Sydney. This is not correct. The ICPC-2 is the intellectual property of the World Organisation of Family Doctors (WONCA). The FMRC is the distributor of ICPC-2 in electronic form in the Asia Pacific Region. The authors prepared and presented the supplier’s response to the Jury on behalf of ICPC-2 at WONCA’s request.

The report suggests that the vendor of ICPC-2 PLUS is the Family Medicine Research Centre and the AIHW General Practice Statistics and Classification Unit of the University of Sydney. This is not correct. The intellectual property of ICPC-2 PLUS is held by the University of Sydney. The University of Sydney is the vendor because it licenses GPs to use the system. The AIHW GPSCU merely distributes ICPC-2 PLUS to some users of BEACH data. It is not a vendor.

The Questionnaires completed for ICPC-2 and ICPC-2 PLUS were labelled “*Questions for coding system suppliers*”, not “*questions for coding system vendors*”.

The submission (Questionnaire) submitted to the Jury was for the combined coding and classification system ICPC-2 PLUS. A separate submission for ICPC-2 (without PLUS) was only submitted as a result of a formal request from the Coding Jury to WONCA to prepare such a document. This separate submission for ICPC allowed the Jury to sometimes consider ICPC and PLUS as separate entities (eg: in the a comparative assesment) and at other times treat them as one entity (eg: p49).

Example 2: P49: In the overall assessment of ‘ICPC-2 and plus’ (this time dealt with together rather than separately as they were assessed) the report suggests that a weakness of these systems is that (it?) “*does not fully support the coding necessary for clinical patient care or administrative needs*”. The reference for this statement is the Report of Consensus 1995. This statement refers to a report of ICPC (Version 1), not to ICPC (version 2), which was not released until 1998, and certainly not to ICPC-2 PLUS which was only released in beta test phase in mid 1995.

Example 3: In 4.8: ICPC-2 PLUS is said to be “*being mapped to ICPC*”. This is misleading Since ICPC-2 PLUS includes ICPC-2 as its stem it is already includes ICPC-2 as part of its coding structure.

Example 4: In speaking of the discussions being held between WHO and WONCA regarding the possible adoption of ICPC-2 into the WHO family of classifications the report suggests that such adoption would be “*after changes*” to ICPC-2. This is incorrect. There is no suggestion either inside these discussions or in WONCA that any changes should be made to the current version of ICPC-2.

Note: *The Jury would not have known that WHO is also encouraging the adoption of ICPC-2 in Cambodia, Laos, Myanmar and Vietnam. The planning of this project was only announced as a combined WHO-WONCA project in late August.*

4. MORE SUBTLE OMISSIONS

Example 1: In the assessment of “*the availability of education and support*” there are several omissions. Firstly there is no consideration of the amount of education required for use of the different systems – purely the availability of such education and support. It is worthy of note that secondary coders in hospitals require a six-month training program in ICD and are supervised by a health information manager. Will GPs require the same level of training?

In contrast, educational requirements for use of ICPC-PLUS are far less and can be web based. Education has been provided to all users for the past 5 years through provision of a User’s Guide (which is regularly updated) on paper and on computer. The computer version includes hyperlinks for easy access to important sections of the Guide.

Example 2: In 4.6 “*Rapid and responsive upgrade*”, the report fails to note that ICD10 AM is upgraded bi-annually and currently responds to secondary and tertiary (and DRG costing) needs. It has had no input from general practice. A two year upgrade period is clearly inadequate for computerised systems. It also fails to mention that upgrades of ICPC-2 PLUS are made every three months in response to user (GP) need.

Example 3: Report page 24: (Section 6.1 Combined solutions). ICPC-2 PLUS is said to be internationally comparable and speaks the language of general practice and is “*highly suited to administrative research in general practice*”. If it is merely an “administrative/research” tool why is it that it is currently being used as clinical coding system by about 1,000 GPs? In contrast ICD10 is used by very few clinicians at the interface, in the secondary and tertiary sector, and certainly not in general practice. Whether used in secondary or primary coding the purpose in hospitals is administrative and not clinical in nature.

Example 4: Appendix 2, page 49.

“Fees apply to the use of ICPC plus. Should ICPC plus be considered the most appropriate classification, negotiation of a licence for general practice throughout Australia would have to be undertaken”.

In the submission to the Jury the WONCA offered a national one off licence for Australian general practice for a fee of approximately \$45,000 US. This could be finalised within weeks.

The University of Sydney offered a free National licence to the PLUS terms in exchange for ongoing support for further development, education, distribution and support, free to the end user.

These are but a few of many examples. More detailed comments about the rankings and associated comments related to each criterion are attached as Appendix 2.

5. IMPLEMENTATION PROPOSAL: SHORTCOMINGS

The lightness with which the report covers future implementation of the recommendation is worthy of note.

The steps outlined in the implementation section cover:

- ◆ Creating a set of additional general practice terms for addition to ICD10 AM.
- ◆ Classifying them in ICD10 AM
- ◆ Selecting a ‘GP sub-set’ of terms

These tasks are not easy nor will they be completed in a short time period.

It is proposed that the National Centre for Classification in Health (NCCH) should be responsible for these tasks yet the experience of this organisation is, in the vast majority, in secondary coding and classification in hospitals.

The Australian Institute of Health and Welfare's GP Statistics and Classification Unit (GPSCU) has extensive experience (25 years) in this area.

5.1 Consistency of implementation in software

If multiple software systems are to code and classify GP terms a consistent approach to implementation will be essential. This will require development of Functionality Specifications similar to those already established for ICPC-2 PLUS.

5.2 The integrity of clinical data

There is no recognition in the document of the need to adapt current users of legacy systems to ICD10 AM. The integrity of clinical data already coded in the clinical records of thousands of GPs must be retained. The legal implications of inaccurate change-over must be remembered.

- ◆ Who is to be responsible for mapping such systems to ICD10 AM?
- ◆ Who will cover the costs of the development of these maps?
- ◆ Who is to check on the accuracy of such maps?

Funding will have to be provided for these maps and the responsibility for the process must be taken by a collaboration of coding system suppliers to ensure validity of the maps.

5.3 The lack of a planned trial

One of the major flaws in the implementation section is that there is no plan to trial the new system prior to rollout. This would be a radically different system for general practice and trials are essential. Is general practice to be told to adopt a coding system untested in this environment?

6. IMPACT ON NATIONAL DATA COLLECTION PROGRAMS

- ◆ If ICD10 AM is to be introduced as the coding system for general practice current paper based data collection programs cannot adopt it.

The problem for reliable **data entry** is the complexity of ICD10 AM and the innumerable coding rules that need to be applied to it. The complexity of these rules is the basis for the need for a 6 month training program for coders in the hospital system.

Its rules also rely on such concepts as “principal diagnosis” – a concept that is not applicable in general practice. The question must always arise as “important to whom? Is the patient’s marital breakdown more or less important than the depression they are currently suffering? Is the pain the patient is suffering with their arthritis more or less important (to the patient? to the GP?) than the IHD also currently under management?

The problem for **data reporting** is the structure of ICD for it does not allow effective grouping of GP activity. For example: the hierarchy of ICD does not group all respiratory problems together. Some go into the respiratory chapter, others into Neoplasm chapter and all the symptoms and signs go into the signs and symptoms chapter.

The structure reflects the relative importance of problems managed in the secondary and tertiary sectors, not in primary care. For example, while Neoplasms are morbidities commonly dealt with in hospitals and by oncologists, they form a very small (though important) part of general practice activity and do not deserve their own chapter in the general practice classification. More details about the structural differences between ICD and ICPC can be provided on request.

This problem with the structure of ICD is the major reason for its rejection by general practice researchers across the world. ICPC-2 must be retained as the analytical tool for general practice data or the data will be of little value.

If current data collection programs were to adopt ICD10 AM, **continuity** of data would also be interrupted. Data from the 1990-91 National study of general practice and the BEACH program (a continuous study of GP activity) that began in 1998 would not be comparable with data collected in ICD10 AM.

Through the GPSCU the University of Sydney is under contract to the AIHW to supply general practice data in ICPC-2. Therefore any decision to adopt ICD10 AM will not affect the current paper based program. However, when moving to data collection from computerised systems the introduction of ICD10 AM would affect both data quality and continuity.

The ABS has tried to use ICD (in its various earlier versions) for many years for its Australian Health Survey. After thorough consideration it has now decided to adopt ICPC-2 PLUS for the coming Health Survey in 2001 and for the 2004 survey.

Northern Territory Health has tested both ICD and ICPC-2 PLUS in community health services (including general practitioners) and have, as a result, adopted ICPC-2 PLUS across the system.

If ICD10 AM is adopted in general practice clinical systems it will render any data drawn from it incomparable with the National data sources (ABS, BEACH, Veteran’s Affairs) and render it incomparable to general practice data collected internationally.

7. CONCLUSION

Adoption of the current recommendation for the adoption of ICD10 AM as the standard classification on its own (it is not a coding system) in general practice in Australia would:

- ◆ put Australian general practice totally out of step with international trends in general practice
- ◆ be expensive and time consuming
- ◆ take too long and be available for only a short time before the recommended move to SNOMED
- ◆ be unacceptable as a language for general practice
- ◆ have an unsatisfactory structure for general practice
- ◆ have a detrimental impact on continuity of data in general practice, splitting the past decade's data in ICPC-2 from those gained in the next five years in ICD10 AM, and splitting again in five years time with the move to SNOMED. Trends in morbidity and management would be impossible to measure across the three time periods.

8. RECOMMENDATIONS

In light of the above, we offer a solution that was put to the DHAC several years ago as a combined proposal of NCCH and FMRC.

It is clear from the report that the Jury have placed heavy weighting on the need to communicate information electronically to and from hospitals (see earlier comments). The following recommendations are based on the concept of providing GPs with both ICPC-2 PLUS and ICD10 AM with structured encoding links between the two. To date communication with other groups has been ignored. It may also be necessary to provide GPs with other coding systems such as ICIDH, DSM 4 and LOINC (being adopted by pathologists). However, these steps will need to be taken at a later date.

We recommend that:

- ◆ the Coding Jury Report be widely disseminated and discussed
- ◆ the Coding Jury Report be referred for further consideration to the Standards Committee of the National Health Information Advisory Council (NHIAC).
- ◆ That the Standards Committee consider:
 - ◆ the use of a mapped set of codes: ICPC-2 PLUS and ICD 10AM
 - ◆ the provision to GPs of both ICPC-2 PLUS and ICD 10AM with structured encoding links between the two
 - ◆ that further development of GP coding and classification systems for general practice be supervised by the GP Statistics and Classification Unit of the AIHW that an effective collaboration be established between the NCCH, the GPSU and other recognised coding and classification bodies through the NHIMG.
- ◆ That general practitioners using other systems should be provided with maps to ICPC-2 PLUS and ICD 10 AM to allow them the opportunity to migrate to the combined system. The HCN should also be offered incentives to facilitate conversion by those practices who wish to do so.

This proposed solution will:

- ◆ allow GPs to code in their own clinical system to their own level of satisfaction
- ◆ allow the GP to record the term received from the secondary and tertiary sector at the level of specificity s/he requires.
- ◆ ensure that GPs can transfer and receive information to secondary and tertiary care in the language of those sectors to the level of specificity possible from the information currently available
- ◆ allow Australia to move forward in general practice coding and classification in parallel with the majority of the rest of the world.
- ◆ should be acceptable to general practice, providing it with a system designed for general practice with its own interface terminology

APPENDIX 1: A BRIEF HISTORY OF CODING IN GENERAL PRACTICE

ICD-10AM is a morbidity and mortality **classification**. It has had no input from general practice. ICD-10 AM is updated (bi-annually) and the committee which inputs to these updates is totally **specialist** based. The rubrics (labels for codes) a “false” language (as they are in ICPC-2 or in any other classification).

General practice internationally rejected ICD in 1972 and its very structure in 1983. (see following background notes)

From the early 1950s it became clear that to improve the quality of primary medical care it was necessary to study the activities of family doctors and their patients’ problems and management. While significant data regarding patient problems was being captured in hospitals using the ICD classifications, these data did not relate well to problems being managed in the community. Early attempts to use ICD to capture community based patient problems revealed its significant inability to adequately code basic health problems seen in the community and that it contained a large number of codes unused or seldom used in primary care. In 1958 The Royal College of General Practitioners ascertained that more than one third of the problems managed in primary care could not be satisfactorily classified according to ICD⁴. This argument continues to be supported in more recent data collection studies that report up to 45% of problems presented in general practice remain undefined at the end of the consultation⁵. With this realisation, groups throughout the world began to develop their own systems for primary care coding and classification of morbidity.

In 1972 WONCA recognised the need for one internationally accepted classification for primary care and created a working party to develop a classification based on ICD 8 for use in family practice. That is: the world of general practice rejected ICD: it had proven itself over two decades, to be inappropriate. However WONCA tried to retain the basic structure of ICD to ensure comparability of upper level data between tertiary and primary care.

Early objectives: *to design an international classification system that would adequately cope with the range of morbidity managed in primary care.*

The resulting classification the ‘International Classification of Health Problems in Primary Care’ (ICHPPC) was published by WONCA in 1975 with the assistance of the American Hospital Association⁶.

A revision of ICHPPC prepared by the WONCA International Classification Committee (WICC) in collaboration with WHO, was based on ICD 9. ICHPPC 2 also included revisions and definition criteria for many rubrics. It was published in 1983, with endorsement by WHO⁷. A companion classification, the ‘International Classification of Process in Primary Care’ (IC-Process-PC) was published by WONCA in 1986. This classification attempted to cover the processes used by practitioners in the provision of primary care. Kerr White, in the introduction to the book suggested that these classifications should, with ICD 10, become part of a ‘family’ of ‘International Classification of Health Problems and Services’⁸.

Later objectives: *To design an international classification system which would better reflect the problems managed in primary care, that would be more reliably applied by primary care providers and that would cover patient reasons for encounter*

Development of ICPC

Throughout the world difficulties were experienced in the reliable application of ICHPPC-2. In parallel there was a growing international interest in a more patient centred (rather than disease centred) approach to primary care and in turn this placed emphasis on the importance of the patient’s reasons for encounter. Recognising the need for a reason for encounter classification, the WHO formed a working party which produced a draft in 1978 – the Reasons for Encounter Classification (RFE-C).

RFE-C was first tested in the Netherlands⁹ and subsequently modified. The modified RFE-C was further tested in an international field trial with family physicians and nurses in nine countries (including Australia), and approximately 90,000 RFEs being analysed^{10;11}.

NOTE that at this point the very structure of ICD was rejected because it did not “think” like general practice. It has a separate chapter for neoplasms etc., separated from the body system involved. General practice thinks in body systems.

Subsequently the WONCA International Classification Committee struggled with the problem of amalgamating the diagnostic sections of ICHPPC, the process codes in IC-Process-PC and the reasons for encounter codes in RFE-C and improving their relevance to family practice. They considered that a fundamental change was needed in the classification structure to make it relevant to people’s experience of their health problems. A bottom up rather than “top down” approach was needed for ordering and relating the elements involved in providing an episode of care, which would include expressions employed by both patients and health professionals for manifestations of ill health and disease. An episode structure was chosen to allow the clinician to describe the development of a problem from patient ‘reason for encounter’, through symptom to disease. **ICD 10 is correctly an ‘end point’ classification for differentiated disease** and as such is complementary to an episode classification.

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APPENDIX 2: MORE DETAILED REVIEW OF RANKINGS AND ASSOCIATED COMMENTS

4.1 Structure of coding system: Hierarchical representation

| Rank | Product | Comment |
|---------|-----------|---|
| 1 | SNOMED | Able to express multiple relationships. The Jury does not have specific information on the quality of these relationships. Given the background of this system it is likely that these relationships will be of high quality. Tested in a highly litigious environment (USA). Hierarchical structure and quality are both good. |
| 2 | Docle | Made up of atomic building blocks (3,500). Appears to be a highly flexible relationship-based structure. It is not clear how these relationships are established. The design has multiple hierarchies possible, but the Jury does not know how they are expressed. |
| 3 (eq.) | ACBHS | Hierarchical and designed with the same structure as that being used for the general practice data set. This system has a fixed single hierarchy that may need to be modified in the future. It is limited to 99 subcategories at each level. There is the potential to link this system to the Australian Clinical Thesaurus as a front end in future applications but there would be development costs required to achieve this. |
| 3 (eq.) | ICD-10-AM | Fixed single hierarchy. The hierarchy allows concept recurrence with a different unique identifier, which may cause some confusion. There is the potential to link this system to the Australian Clinical Thesaurus as a front end in future applications but there would be development costs required to achieve this. |
| 5 (eq.) | ICPCplus | A two-level hierarchy represented by axes. The system divides the knowledge base in a way that makes navigation and code allocation simple and enhances certainty of code allocation in some cases. Examples such as 'pre-pregnancy check' include elements of gynaecology, immunisation, nutrition, and family and personal medical history. The code allocation in this example is not simple. If adopted, it would need to be modified to suit a future terminology. A hierarchy of two levels is unlikely to be adequate and the number of sub-classifications may need to be expanded. Each synonym has its own identifier thereby providing more terms in the system. |
| 5 (eq.) | ICPC-2 | A two-level hierarchy represented by axes. The system divides the knowledge base completely in a way that makes navigation and code allocation simple and enhances certainty of code allocation. If adopted, it would need to be modified to suit a future terminology. A hierarchy of two levels is unlikely to be adequate and the number of sub-classifications may need to be expanded. |

COMMENTS

- ◆ SNOMED ranks 1 even though 'the Jury does not have specific information on the quality of these relationships'.
- ◆ DOCLE ranks 2, even though "the design has multiple hierarchies possible but the Jury does not know how they are expressed"
- ◆ ICD10AM: mention is made of the Australian Clinical Thesaurus which is no more than an index list for AM
- ◆ ICPC-2 PLUS: Check-ups can also be coded in ICD10AM and in other systems and whether pre-pregnancy or not, multiple concepts are involved in this label. It is a common label used in general practice when no disease is identified.

The inclusion of this comment about ICPC-2 PLUS is therefore selective. Further, the jury suggests that the placement of this concept in ICPC would be difficult. It is not – the structure of ICPC ensures there is no doubt as to where it should be placed. Further, in an electronic clinical system using an interface terminology the GP does not need to decide where it goes. The term is selected by the GP and the system automatically codes it.

4.2 Structure of coding system: Reliability and validity

| Rank | Product | Comment |
|---------|-----------|---|
| 1 | ICPC-2 | The low number of possible codes enhances the likelihood that they are accurately allocated. Likely to be reliable and validly placed. Most widely used research tool in general practice in Australia. |
| 2 (eq.) | ICD-10-AM | Well established in a different clinical domain. It is highly disciplined in its creation and brings with it many years of clinical review and contribution. Incorporates logical rules and edit control tables. |
| 2 (eq.) | SNOMED | Vendor provided significant evidence on validity and was the only vendor that has discussed this area as a specific issue. The Jury is not in a good position to measure this information. Does not have edit rules warnings/rejections applied. |
| 4 | ICPCplus | Low number of possible codes enhances the likelihood that they are accurately allocated. Likely to be reliable and validly placed. There has been less publication using this classification and the use of synonyms may increase the possibility of error. |
| 5 | Docle | No known scrutiny of exported vocabulary. Unfortunately there is no published information about this system's use in Australia by general practitioners. There is an inherent reliability as the codes themselves are a representation of the English terms being used. The identifier expresses the knowledge in the concept. Allocation of wrong codes is unlikely, but similar terms may be coded as different concepts. There is a defined syntax to code allocation, aiding consistency. |
| 6 | ACBHS | Unproven, created by an organisation that is likely to have given considerable thought to the content and structure of the system. High levels of consultation were involved in the development process, but the implementation and 'usability' for general practice are untested. |

COMMENTS

- ◆ ICPC: There is internationally published data on the reliability and validity of ICPC
- ◆ ICD10AM: Inclusion of rules is not a positive comment on reliability and validity. In fact the more rules that are required, the less reliable the system must be in the first place. Further, rules only improve the reliability if all users are well trained in them and apply them consistently. How are GPs to be trained in the complex rules that apply to ICD10AM?
What should be considered is the validity of each system **in general practice**. ICD has been demonstrated to be invalid in this environment. (See Appendix 1)
The comments really pertain to ICD10, rather than 10AM.
- ◆ ICPC-2 PLUS: is not a classification. The classification is ICPC-2. A bibliography of approximately 250 published papers reporting studies of or with of ICPC was provided to the jury and this included papers on reliability and validity



4.3 Structure of coding system: Granularity

| Rank | Product | Comment |
|---------|-----------|---|
| 1 (eq.) | Docle | Unlimited granularity. |
| 1 (eq.) | SNOMED | Highly granular. The Jury was not able to test the general practice component. The structure will support further development. Average of seven levels. |
| 3 | ICD-10-AM | Five levels available, but limited to that (10,000 codes). A future restructuring exercise may be necessary. There are over 20 chapters or basic units. |
| 4 | ACBHS | Multilevel (seven levels). The level of granularity is fixed to a maximum of seven levels, which should be adequate for most situations, but in the future may require restructuring. |
| 5 | ICPCplus | Greater than ICPC-2 and there is the capacity to tailor. The granularity is increased but in an unstructured way |
| 6 | ICPC-2 | Very limited. |

COMMENTS

- ◆ The majority of these comments seem to refer to the number of levels in the hierarchy rather than granularity
- ◆ The suitability of the granules for general practice is ignored.
- ◆ In many cases ICPC-2 PLUS is more granular than ICD. When you look up ‘claustrophobia’ for instance in ICD you will end up coding it as “other “phobia”. There are many examples of this. In all “other.....” codes there are multiple disease or symptom labels listed for inclusion but these do not have their own code. The term may be in the index but it is coded under “other...”. This provides insufficient specificity for the medical record for continuity of care.

Note: in Section 4.10 ICPC-2 PLUS is said to have insufficient granularity for decision support. Is the coding Jury referring to management decision support or diagnostic decision support? The latter requires specificity in the symptoms complaints section. The former requires specificity in both symptoms and diagnoses.

4.4 Structure of coding system: General practice sub-set available

| Rank | Product | Comment |
|---------|-----------|--|
| 1 (eq.) | ICPCplus | This is a general practice designed system, therefore general practice specific, though a small one and therefore limited. |
| 1 (eq.) | ICPC-2 | This is a general practice designed system, therefore general practice specific, though a small one, and therefore limited. |
| 1 (eq.) | Docle | This is a sub-set in itself as it is created and maintained by the input of general practitioner phrases in Australia |
| 4 | ACBHS | Over 100 general practitioners involved in the development process. There is currently no specific sub-set for general practitioners. The process of extraction should be quite simple. |
| 5 | SNOMED | SNOMED-CT will provide this level of input. It does not exist at the moment. |
| 6 | ICD-10-AM | Not at this time, however this exercise could and should be done prior to implementation were this system chosen. The administration of this system is already established to support clinical input and modification. |

COMMENTS

- ◆ ICD10AM: This suggests that a sub-set should be selected through the current systems established to support clinical input into modifications. The current committee does not include general practitioners.
- ◆ ICPC-2 PLUS: is as large as it needs to be to cover the 1 million encounter records provided by GPs to date written in their own terms. It grows as required by clinician’s language needs.
- ◆ ICPC-2 is a far smaller than ICPC-2 PLUS. It appears the Jury does not distinguish here between the two.
- ◆ SNOMED: this comment refers to SNOMED CT which does not yet exist. The comment about SNOMED should be, that it does not include a GP sub-set at all.
- ◆ ICD-10AM: again this is about a possible future scenario. The comment should be “No GP sub-set available”

4.5 Maintenance: Availability of education and support

| Rank | Product | Comment |
|---------|-----------|--|
| 1 | ICD-10-AM | Great capacity to carry out this task and experience demonstrated. NCCH are not resourced or experienced in general practice education or coding, but their presentation was the only one that spontaneously addressed the issue of the needs for general practice education. |
| 2 (eq.) | ICPCplus | Support is very good and low in risk. The education plan is sound though not proven. |
| 2 (eq.) | ICPC-2 | Support is very good and low in risk. The education plan is sound though not proven. |
| 4 | ACBHS | The vendor is currently tendering for an organisation to provide these services. This is expected to be in place by July 2000. |
| 5 (eq.) | Docle | The system is maintained by a single busy general practitioner with great insight into the system and into the needs of general practice. If it were to be implemented nationally, a full infrastructure would need to be created and maintained. This process would require significant transfer of knowledge. No evidence provided regarding proposed education processes. |
| 5 (eq.) | SNOMED | Left to software vendors; with some education available through the World Wide Web. |

COMMENTS

- ◆ The extent to which education and support are needed to effectively run the system are not considered. How are 18,000 GPs to be trained in this complex hierarchical system which requires application of a multitude of rules?
- ◆ There is a suggestion in the report that the ICD10AM books could be "purchased" (p50). All five large volumes for each GP?
- ◆ DOCLE and ICPC-2 PLUS require far less education than ICD10-AM.
- ◆ There is no consideration of the training needs for those who will collect and analyse and report the data.
- ◆ Currently secondary coders in hospitals are required to undertake a 6 month training program and are supervised by a Health Information Manager.
- ◆ The ICPC-2 PLUS User Guide has been provided to all users of the system for the past five years. It has **proven sufficient**. Interactive education may assist in future through the web for those who do not like to read a Guide.
- ◆ The written submission for ICPC2 PLUS (and, we assume, for all other systems) fully addressed the educational needs of GPs. The brief time provided for the presentation limited the number issues that could be addressed verbally.
- ◆ Web based education was proposed for GPs using ICPC-2 PLUS with personal training at SOB level (train the trainer) for further education of those required to analyse the data. In addition a help line has been provided for the past five years with great success.

4.6 Maintenance: Rapid and responsive with upgrade processes established

| Rank | Product | Comment |
|---------|-----------|--|
| 1 | ICD-10-AM | Excellent track record in the Australian setting and this could be expected to continue. |
| 2 (eq.) | ICPCplus | The J code system and hot line processes provide comparatively rapid update. The update process is responsive. |
| 2 (eq.) | Docle | As an interface application this product has a sound record, but there is no evidence of a classification schema existing. Despite the good track record in this area, the process would have to be institutionalised so that it does not depend upon one person. |
| 4 (eq.) | ACBHS | The updating processes not yet implemented. It will be maintained in an Australian Centre. It is likely that the upgrade processes will be sound. The process has ongoing funding which supports its ability to maintain processes. |
| 4 (eq.) | SNOMED | Turn around time yearly updates. Concerns were raised about the vendor's understanding of the Australian situation. Upgrade processes are tightly controlled. Australia's involvement in the maintenance organisation of SNOMED must be clearly defined at an acceptable level in any contract. The contract could require the ability to maintain an Australian sub-set similar to the ICD-10-AM model if responsiveness was not appropriate. |
| 6 | ICPC-2 | Ten-year cycle which is typical of a major international classification. Given the coarseness of granularity this may not be an issue. |

COMMENTS

- ◆ ICD10AM (RANK 1) has a **bi-annual update** process – far too long for electronic system use.
- ◆ ICPC-2 PLUS (Rank 2) has a **quarterly update** process
- ◆ ICPC: the same ten-year cycle could be said of ICD.

4.7 Mapping/links: Mapped to hospital and specialist care coding systems

| Rank | Product | Comment |
|-----------------|-----------|---|
| 1 | ICD-10-AM | This is the hospital system so mapping is not required. The NCCH has also been involved in mapping to the Community Code Set and to many other systems. Unified Medical Language System (UMLS) mapping is in progress. This would provide enhanced communication between tertiary and general practice clinical environments. |
| 2 | ACBHS | Mapped to ICD-10-AM and to ICPCplus, but the ICPCplus mapping would need to be updated. It is therefore mapped to the main Australian term sets, but not to pathology coding systems. It has been mapped to 400 different Australian data sets. It is not mapped to the UMLS. |
| 3 (eq.) | ICPCplus | Mapped to ICPC as it is an 'extension' of ICPC-2. UMLS mapping is in progress. Many of the ICPC-2 mappings are one ICPC-2 code to many ICD-10 codes. Loss of specificity is likely when mapping. This means that considerable detail would be lost in communication from hospital to general practice etc. |
| 3 (eq.) | SNOMED | Is mapped to UMLS and LOINC, but would need to be mapped to ICD-10-AM. Contains all specialty concepts. If it was to be implemented sector wide, there would be considerable work mapping from SNOMED to Medical Benefit Schedule extended (MBSE) and ICD-10-AM (parts). |
| 5 (eq.) | ICPC-2 | Mapped to ICD-10, but not to the ICD-10-AM version, which means that procedures aren't included in the mapping. UMLS mapping is done. Many of the mapping are one ICPC-2 code to many ICD-10 codes. It is mapped to Read. Loss of specificity is likely when mapping. This means that considerable detail would be lost in communication from hospital to general practitioner. |
| 5 (eq.) OR 6 | Docle | The developer indicated that Docle has been mapped to 80% of ICD-10 but that his resources are insufficient currently to develop further mapping. |

COMMENTS

- ◆ The comments said to be about ICPC-2 PLUS currently talk of ICPC-2. In fact, it is true that in some cases (particularly in specific disease codes) many ICPC-2 PLUS codes map to on ICD 10AM code. However, it is equally true that in many cases many ICD10AM codes map to one ICPC-2 PLUS code. That is, in some areas ICPC-2 PLUS is more specific than ICD10AM and in others the reverse is true.
- ◆ There is currently no data which comes from hospitals to GPs in coded form. Are there any current plans for direct clinician entry in hospitals?
- ◆ Private specialists do not code in anything: are there plans afoot to force them to do so?
- ◆ Neither secondary or tertiary sectors are in a position to receive data from GPs in coded format (no matter what it is coded in).
- ◆ Only one in 200 encounters in general practice result in a referral to hospital or Emergency Departments. Only one in 20 result in a referral to a specialist or allied health professional. Are GPs to be burdened with an unsuitable classification for all other coding in order to communicate on these rare occasions, to systems unable to utilise the coded communication?
- ◆ Coding systems are not "mapped to" UMLS– they are *included* in it: it is a reference terminology which allows cross reference (and sometimes mapping – where common concepts exist in two systems) between coding systems.



4.8 Mapping/links: International comparability

| Rank | Product | Comment |
|------|-----------|---|
| 1 | ICPC-2 | Well recognised and used in 40 different countries. |
| 2 | SNOMED | Highly comparable, and likely to provide links to decision support systems, but doesn't include direct mapping to Australia's hospital coding system. |
| 3 | ICD-10-AM | The ICD-10 base of the classification gives international comparability. |
| 4 | ICPCplus | Being mapped to UMLS and to ICPC-2, which is internationally comparable. Therefore international comparability is obtained indirectly through ICPC-2, not directly through ICPCplus. |
| 5 | ACBHS | Compatibility is provided through the ICD-10 mapping, but mapping to other classifications does not exist. The inclusion of this code set into HL7 internationally indicates a likely future international comparability in the community health environment. |
| 6 | Docle | Not provided at this time. |

COMMENTS

- ◆ ICD is said to provide ICD10AM with international comparability.
- ◆ In contrast ICPC-2 is said to provide ICPC-2 PLUS with only "indirect" international comparability.
- ◆ Since the two systems are Australian extensions of international systems the same "rule" must apply to each.
- ◆ The Jury must rule that either the two systems have international comparability through their stems, or both have only indirect: international comparability through their stems.
- ◆ Since ICPC ranked first for international comparability, ICPC-2 PLUS must be equal first through its stem ICPC.
- ◆ HL7 is a communication system

4.9 Language: Concepts described in Australian general practitioners' language

| Rank | Product | Comment |
|------|-----------|---|
| 1 | ICPCplus | Extensive consultation with Australian general practitioners and based upon a series of years of data collection. Despite this, the research/administrative nature of this system has left the possibility for considerable gaps in terminology for ICPCplus to represent all required concepts. |
| 2 | Docle | Highly reflective of general practitioners' language. The terminology comes from, and is widely distributed to, Australian general practitioners. The Jury has no information on the level of use or satisfaction with the product. No researchers appear to be publishing or developing work using this base. This could be because it is a comparatively new system. |
| 3 | ICD-10-AM | There may need to be an initial injection of general practice concepts, synonyms and acronyms. There has been a large Australian clinical input into the development of ICD-10-AM, therefore infrastructures are in place to meet language needs of general practitioners. |
| 4 | ICPC-2 | There are no synonyms. Australians were involved in the initial development of the classification so Australian needs should be reflected. |
| 5 | ACBHS | There are no synonyms at this time. There was significant input from general practitioners, but this was not necessarily widespread consultation. If chosen, considerable input of general practice concepts, synonyms and acronyms would be necessary before it would suit implementation in general practice. |
| 6 | SNOMED | Unable to measure this directly. No direct response from SNOMED, but the software vendor Cyber+LE provided a response that showed that SNOMED could map 60% of the terms that the Jury provided. SNOMED has had no Australian input and relatively small input from primary care, though the vendor has indicated a willingness to include Australian and primary care input. |

COMMENTS

- ◆ ICPC-2 PLUS: ICPC-2 PLUS cannot be said to have a "research and administrative nature". It has been used in general practice clinical systems for five years. There are currently about 1000 practices using it clinically. The Jury was informed in the submission that feed back is received from these end users and additions made to ICPC-2 PLUS in response to this feedback every 3 months.
- ◆ The ranking of ICPC below ICD for this measure is notable. There has been no input of general practice (Australian or otherwise) into ICD10AM. The comments fail to add that ICD10AM is used only "for administrative purposes" in the hospital system and sometimes for research.
- ◆ ICPC was designed for general practice by an international committee of general practitioners. This Committee is part of the World Organisation of Family Doctors. However, ICPC also incorporates the work of a WHO committee of reasons for encounter, also general practice based.
- ◆ ICPC: "Does not include synonyms" seems out of context with the criterion. Nowhere else are synonyms discussed in the assessment of this criterion.

4.10 Language: Required concepts are represented, including diagnoses, symptoms, treatments, reasons for encounter

| Rank | Product | Comment |
|------|-----------|---|
| 1 | Docle | The source of the system is general practice. However there are no independent evaluations or assessment of the useability of the system. If Docle is adopted, rigorous and extensive independent evaluation would need to be performed. Where other systems have groups of experts evaluating their systems, this has only one expert. |
| 2 | ICD-10-AM | The primary care and social areas of ICD-10-AM are less extensive than may be required. If ICD-10-AM is to be used in general practice it would need the addition of general practice specific concepts. |
| 3 | SNOMED | One of the most detailed list of concepts in the world. The origin of this system in pathology provides an extensive and detailed base of terms, but many of these terms require specificity, or do not provide the ability to record social elements. SNOMED is still driven by its pathology origins, funding models, and academia. If SNOMED is adopted there may be considerable modifications required. |
| 4 | ICPCplus | Because of the nature of its creation and maintenance it is likely to contain most concepts relevant to general practice. If this were adopted there is a high likelihood that any concepts that are not already present could be included because it is Australian based and has established processes for this maintenance. The coarse granularity of this system would mean that the specificity of data received from hospital sources would be lost. |
| 5 | ACBHS | The concepts have been developed by consultation with primary care workers and with some general practitioners; and it therefore includes a wide representation of concepts specific to primary care. |
| 6 | ICPC-2 | Though the concepts included allow general reporting of concepts in general practice, these concepts may not be sufficiently detailed for decision support software. Required concepts are more detailed than this system provides. This reflects the origin of the classification as a classification for reporting of general practice activity. The lower performance of this system in the review reflects the increasing need for more detailed information to support the wider uses for coding systems for today and the future. |

COMMENTS

- ◆ Most of the comments included here are irrelevant to the criterion. There is no assessment of the extent to which each system covers the listed concepts for which coding is required. For example: DOCLE is ranked 1 -which of these concepts does DOCLE cover?.
- ◆ To what extent does ICD10AM cover reasons for encounter? The action of WHO in setting up a committee to establish a reason for encounter classification in 1983 (see Appendix 1) suggests that ICD did not cover this area at all well. The additional codes added in ICD10 give only broad coverage of the concepts described by patients as their reason for encounter.
- ◆ ICPC-2 included the WHO committee's RFE system so must cover this concept better than ICD (see Appendix 1)
- ◆ ICPC-2 PLUS is based on 1.4 million recorded RFEs and includes RFE concepts fed in by GP end users. It also has extensive sections for clinical treatments, therapeutic procedures, symptoms and diagnoses in general practice.
"The course granularity of this system would mean that the specificity of data received from hospitals would be lost".
 As said elsewhere in these comments: what data received from hospitals?
 In many areas ICPC-2 PLUS has higher coding granularity than ICD10AM – particularly in the areas of RFEs, symptoms and complaints, pathology and radiology ordering, counselling and other clinical treatments.
- ◆ SNOMED is currently secondary care based. Only when Read is added to it in the future could you possibly consider it covered symptoms or reasons for encounter. As yet SNOMED-RT does not exist.

4.11 Coding system infrastructure: Availability of computer files

| Rank | Product | Comment |
|---------|-----------|---|
| 1 (eq.) | ICD-10-AM | Yes |
| 1 (eq.) | SNOMED | Yes |
| 1 (eq.) | ICPCplus | Yes |
| 1 (eq.) | ACBHS | Yes |
| 1 (eq.) | ICPC-2 | Yes |
| 6 | Docle | It is necessary that the vendor be able to export ASCII (or equivalent) files of the knowledge base, with documentation. The vendor did not provide an example of this. |

- ◆ **No comment**