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MEDICAL SERVICES INDUSTRIES: REPORT ON RESEARCH IN PROGRESS

AUTHOR: Peter White

AUSTRALIAN BUREAU OF STATISTICS

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CONTENTS

Precis

1. As part of ABS's efforts to extend the range of service industries included in its industry survey program, research is currently being undertaken to determine the feasibility of including the medical industries in this program. This paper reports on the work that has been undertaken so far, the statistical and other issues that are being considered and the survey pilot testing and operational schedules that are planned.

Industry scope of the research

2. The industries being researched for inclusion in the program are ANZSIC classes 8621 General practice medical services, 8622 Specialist medical services and 8631 Pathology services. The first two of these are linked to ISIC 8512 Medical and dental practice activities and the third is linked to ISIC 8519 Other human health activities. There are some issues to consider in relation to the concordances between the ANZSIC and the ISIC and these are briefly covered later in this paper.

Medical Services Industries in the Australian environment

3. The discussion below focuses on aspects of the situation in Australia which have a bearing on the collection of statistics about the medical industries. This may be an area of the national economy where there are considerable differences from one country to another. This can arise because of different approaches to funding and the provision of medical services in a country and different relationships between the public and private sectors and between hospitals and private practice medicine.

4. Basically, in Australia, general practice and specialist medical services are provided by the businesses of private medical practitioners (called "practices"). Patients are charged fees for services provided, and, up to a predetermined scale level, these fees are either refunded to the patient or paid directly to the individual practitioner on behalf of the patient, on submission of a claim to a government funded instrumentality (the Health Insurance Commission - HIC). The HIC is partly funded by a taxation levy on personal incomes of individuals.

5. A feature of the medical industries is the dominance of many small statistical units. While many practitioners work in their private practices in "associateship" arrangements with other practitioners, the statistical units for compiling financial statistics are generally not able to reflect this group practice situation (as explained later). While much of private medicine involves very small scale units, technological developments and large scale capital investment in particular are encouraging the pathology and diagnostic imaging sectors of the medical industries to become more concentrated, large scale businesses. Of only about 150 pathology businesses in Australia, about 5 each employ more than 1000 staff.

6. A major issue for statistical purposes is the considerable diversity and complexity of the statistical units used by medical practitioners to conduct their practices. Where practitioners have surgeries at different locations, the legal entity arrangements used in conjunction with other practitioners can vary at each location. The very common "associateship" arrangements usually involve each practitioner maintaining arms-length financial entities from those entities used by other practitioners who are all otherwise working closely in conjunction in a single physical setting (a surgery). This presents considerable difficulties for the statistician where the statistical users' perception of the entity being measured will differ in a major way from the entities recognised for the compilation of statistical data.

7. Considerable statistical and definitional complexities arise out of the overlap between medical services provided by medical practices (the businesses of private medical practitioners) and medical services provided within the hospital system (and to a minor extent various community health centres). The hospital system is complex, involving 8 State Government conducted "public hospital" systems (often decentralised with substantial local control), many hospitals conducted under Government policy direction by non-profit institutions (such as churches) and many private, profit making hospitals run independently. The circumstances under which medical practitioners work within the various hospital systems varies considerably from one system to another, and also

according to the field of specialisation of the medical services involved. Newly qualified doctors tend to be engaged solely as employees of public hospitals. However, many of the fully qualified doctors employed by hospitals have a dual role as hospital employees but also as a private medical practitioners earning "business" type income. Such situations partly account for the large numbers of "part-time" private practitioners, whose part-time "practices" would be in-scope of the survey of the medical industries. Many medical practitioners also work on a contract basis for the public hospital systems (called Visiting Medical Officers - VMOs). These arrangements do not appear to involve an employee/employer relationship. They pose considerable statistical issues when the contract payments are directed to (an often unincorporated) entity controlled by the medical practitioner, which is independent of the other entities used by that practitioner to derive medical services income, not associated with the hospital.

Requirements from users of statistics of the medical services industries

8. The usual factors for determining the priorities for including the medical industries in the ABS service industries surveys program, include consideration of the size and economic significance of the industries, their potential for employment and export income growth, the extent of government financial or micro-economic reform interest, the availability of alternate (eg non-official) statistical sources and the costs to ABS (ie taxpayers) and the medical professional community in gathering the information. The prime requirement for statistics which demonstrate the structure, operations and performance of the medical industries arises from the relationship between the medical profession, whose practices (ie businesses) rely on government-derived funding of a substantial part of the cost of patient consultations, and the Federal Government, which provides this very substantial funding. Negotiations to set the levels of funding that will be provided have in the past been conducted in the absence of authoritative statistics on such issues as the cost structure of private medical practice, profitability of and return on capital invested in medical practices and the relativities between different types of medical practices (eg involving different specialties, different regions of Australia, different sizes and working arrangements of practices, etc). The Government and private sector industry and professional medical associations are involved in a variety of policy considerations which are of a "micro-economic reform" nature aimed at achieving more efficient and effective delivery of medical services (eg the issue of optimum practice size, the range of services provided, geographic spread of services, workforce issues etc). In the ultimate, the Federal Government's aim is to keep the growth of medical services, of which the private medical industry forms an important element, within manageable limits (ie as a proportion of GDP). It is these factors that are driving the interest in statistics of the medical industries rather than other considerations such as the potential for employment and export income growth. Primarily for reasons of the complexity of the practice arrangements of the medical profession and the cost of conducting statistically valid surveys , there has been negligible financial information produced about the structure, operations and performance of the medical industries by any government or non-government organisation in Australia.

9. One of the difficulties we have found in determining just what statistics are required by the user community is that there is some confusion between statistics which relate to medical practitioners as individuals (statistics of the type derived from population surveys) and those which relate to the practices (ie businesses) in the medical industries (industry statistics). The user community has some difficulty seeing this distinction made by statisticians and consequently their statistical requirements become a mixture of information which requires both population survey and business (practice) survey methodologies to satisfy. This applies particularly to statistics about "income" where two very different types of statistics could be derived depending on whether a population survey or a business survey approach is adopted. For reasons explained later in this paper, it is planned that ABS will attempt to provide statistics which are derived from surveys of medical practitioners as individuals and also from the more usual type of business survey of medical practices, which can be designed to produce statistics on a compatible basis with surveys of other industries in the economy.

10. In summary , based on the stated requirements of the user community and the need for comparability with other statistics and standards, the main types of statistics that are planned to be derived from ABS surveys under consideration at the moment are -

Requirements relating to individual medical practitioners -
Statistics sought about individual practitioners include time worked categorised by different activities and types of practitioner, workforce data such as source of medical training and participation in various government initiated programs and possibly other demographic and professional characteristics (eg age, sex, patient contacts, etc).
Requirements relating to the medical industry (practices) -
a) Income from the provision of medical and other services. This is a key data requirement of users.
b) Costs associated with the operation of medical practices. There are likely to be some 20 separate costs identified. This cost data is a key requirement.
c) Profit or other net measures. This data is an important requirement.
d) Employment. Numbers of persons in the major occupational groupings are also sought. The preference is for full time and part time numbers to be identified but also "full time equivalents", which presents as yet unresearched issues to be resolved. This data is a key user requirement.
e) Fixed assets, additions, disposals. This data, and other balance sheet data generally, is a relatively minor requirement for the main part of this industry, with the possible exception of the capital intensive pathology and diagnostic imaging sectors.

Statistical issues

11. As our research has proceeded we have increasingly found that surveys of the medical industries will involve some very complex methodological and sample design aspects which have not needed to be considered in ABS surveys of other parts of the economy. In addition, the medical profession itself presents possibly a quite different challenge to ABS in terms of convincing the profession of the need for and validity of the survey, which is necessary for us to achieve a satisfactory statistical result. Some of the data that will be sought is also new and complex compared to many other business-type economic surveys run by ABS and requires considerable research and development effort. The main areas of research and the issues being considered are outlined under several broad headings below.

A. Statistical units issues

12. A basic prerequisite of conducting financial or economic surveys of the medical industries is to define the statistical unit about which statistics will be produced. Ideally this unit should be defined on the same basis as units in other industries. In the case of the medical industries, for convenience, we have called this statistical unit the "practice", which should equate with the common perception of the "business" or the "enterprise". The basis upon which ABS defines such statistical entities is the availability of financial data, such as gross income, capital expenditure, profit, expenses, and total employment, from the management records of businesses. Applying the usual ABS basis of defining statistical units will not necessarily result in the definition of a medical practice being in accord with the way in which the user community would define such practices. For example, two common "user community" views of the definition of a medical practice are as follows -

a) The "surgery" definition. This "definition" involves the view held by most of the user community, that the medical practice could be defined as encompassing the whole situation where medical practitioners are able to "share" patients. In such a case, the physical structure of a medical surgery is important - a number of practitioners will be co-located, using common reception, accounting, and other facilities/services. When a patient presents, it is then possible for the patient to see another doctor at the same "surgery" if their usual doctor is absent. Such an arrangement can be seen as a form of "single entity" group practice, and has been treated as a single statistical unit for some funding purposes and for the work of many health researchers who have studied the nature of medical practice work arrangements and related issues such as patient/doctor interfaces, prescribing practices, equipment availability and usage, etc. It has not been a unit used for the collection of

financial statistics.

b) The "practitioner" definition. Another "definition" of a medical practice appears to be that associated with the view that the practice relates to the provision of medical services by an individual practitioner, regardless of the differing legal entity and physical location arrangements under which the medical practice is undertaken. So in this case, for example, the medical practice would be seen as an amalgam of the work undertaken by an individual practitioner, perhaps as a VMO in a contractual arrangement with a hospital, along with the practitioner's share of the involvement in a private practice partnership or company at one surgery location and as an incorporated sole practitioner working alone at another surgery location.

13. However, in considering the compilation of financial/economic statistics we find there commonly exists a number of arms-length sets of financial accounting records (legal entities) within which can be seen by users as a "practice". But this does not necessarily mean that these financial entities can be aggregated to form a single "practice" statistical unit. Our problem is that common perceptions of how a medical practice should be defined are not able to be met in compiling industry statistics which are dependant on the availability of and possible combination/dissection of discrete sets of financial accounts to achieve such a definition. A key element of the problem is that there is no conceptual or definitional basis for combining the accounting data for entities which are by no means under common control. In a practical and cost sense, it is also not viable to be able to identify the various (legally) unrelated entities that come together to work in the physical confines of a medical surgery (the group practice where individual practitioners operate via their own arms-length entities). Consequently, we do not believe that it is possible to design the survey statistical units to enable the application of the user perceptions of a "medical practice", as described above. Our basic approach is to now design an approach which will produce statistics getting as close as we can what we believe the user community can live with. Our thinking at the moment is that great flexibility in providing a number of different classifications to the various types of statistical units in producing output statistical tables may be the most suitable direction to now consider. This will involve close liaison with the main user organisations.

14. In the following notes, the arrangements used by medical practitioners to structure their practices are described further. The arrangements where practitioners work in various forms of group practice are the most complex forms of arrangement to resolve in defining medical practices. As these group practices are very common, their definition and statistical treatment is a core issue to resolve in developing and conducting economic surveys of the medical industries. The financial arrangements for group practices can be structured in a variety of ways and a number of these are illustrated in the Attachment to this report (under Sections B, C and D).

15. A very typical form of arrangement is that shown as being established by medical practitioners numbers DD and EE in the Attachment. Each of the square boxes represents the existence of an independent set of financial accounts (legal entities). This example is known as an "associateship" which is probably the most common form of group practice arrangement where two or more medical practitioners practice in conjunction. In this simplified example there are four sets of financial accounts for the four separate legal entities involved in the arrangement. Entities 38, 39 and 41 operate from a single surgery location, while entity 40 relates to the activities of one of the medical practitioners on contract at a separately located hospital. The separate entities, operating with discrete sets of financial accounts, are as follows -

Company 38 Reflecting doctor DD practicing via a corporate (medical practice company) legal entity, no. 38. The core data relevant to this company is -

- Income received from patient charges, Medicare rebates, insurance company work, possibly dividends received from the administration company no.41.
- Expenses, being predominantly a single payment to administration company no.41 for property, employment, administrative and other services provided, plus vehicle, finance, practitioner DD's salary as an employee and other expenses paid by the practitioner's company (no. 38) directly.
- Profit, being the difference between income and expenses (may be nil where the practitioner as an employee takes profit as salary and the company pays superannuation contributions and other expenses on the medical practitioner's behalf).

Company 39 Reflecting doctor EE practicing via a corporate (medical practice company) legal entity, no. 39. The core data relevant to this company is -

- Income received from patient charges, Medicare rebates, insurance company work, possibly dividends received from the administration company no.41.
- Expenses, being predominantly a single payment to administration company no.41 for property, employment, administrative and other services provided, plus vehicle, finance, practitioner EE's salary as an employee and other expenses paid by the practitioner's company (no. 39) directly.
- Profit, being the difference between income and expenses (may be nil where the practitioner as an employee takes profit as salary and the company pays superannuation contributions and other expenses on the medical practitioner's behalf).

Unincorporated Entity no. 40 Reflecting doctor EE as a sole practitioner (unincorporated) receiving sessional payments from VMO work on a contract basis to a hospital. The core data relevant to this unincorporated entity is -

- Income is from sessional payments from VMO work at a hospital plus any dividends received from the companies (nos.39 and 41)
- Expenses are probably minimal, and possibly include some payment for use of hospital facilities.
- Profit probably equals income from VMO work at a hospital plus any dividends received from the company (no.39) less hospital facilities charges.

Administration Company 41 Reflecting an administration company (no41) owned by doctors DD and EE. This entity employs the support staff engaged in providing receptionist, secretarial, bookkeeping, ancillary health services and business premises services, and charges companies nos 38 and 39 for these services. The core data relevant to this company is -

- Income is from payment for administration, property and other services rendered to medical practice companies nos. 38 and 39
- Expenses are related to paying the support and administrative staff, premises, equipment, consumables, etc. costs
- Profit may be nil if owned by both doctors DD and EE (break even basis of operating) or if a profit is made then it could involve payment of dividends to doctors DD and EE.

16. In this "associateship" example there are four sets of financial records and therefore four separate entities from which data would need to be collected or estimated for and be reflected in the statistics.

17. Using the example above, to recognise the "surgery" definition of the medical practice, as preferred by some statistical users, would require an amalgamation of the accounts for all four entities. Transactions between the entities would need to be eliminated by consolidation. The four entities are clearly not under common control and are therefore not able to be defined as part of an associated group of entities. The Attachment to this report shows some variations to the way such arrangements are structured which add further complications to any definition which would require these entities to be amalgamated. The legal entity basis of the example above also does not indicate the situation where practitioners may be working via their practice entities at more than one surgery location, and in differing arrangements with other practitioners at each location. From a methodological view, the sampling strategy planned would typically involve only entities 38 and 41 or 39, 40 and 41 being selected (ie in this situation the sample would probably select Doctor DD and this doctor's practice entities - nos. 38 and 41 **or** Doctor EE and this doctor's practice entities - nos. 39, 40 and 41). These situations would virtually preclude the use of a definition that required an amalgamation of these four entities. The "practitioner" based definition of a medical practice preferred by some users may be possible to implement via an analysis and apportioning of the accounting data for all the entities in which a practitioner is involved. However, this is not a viable option in a large scale mail enumeration statistical survey and also is completely at odds with the standard approaches to the definition of statistical units in an integrated statistical system.

18. In terms of a definition of the medical practice for the purpose of compiling financial statistics, there then appears to be little option but to take as the basis of a "practice" definition, the availability of financial records for the various entities involved. So applying this approach, the economic/financial statistics compiled would treat each of the four entities shown in the "associateship" example separately, and subject to the sample design, each would separately contribute to the aggregate statistics.

19. In determining an appropriate statistical unit definition for the medical industries, the model we use needs to take account of the considerable diversity of arrangements used to conduct such practices, it should be capable of generating useful statistics which represent the "real world" as closely as possible for the statistical user, it should accord with statistical standards as far as possible and it should be explainable to questionnaire respondents and be practicable to use in a statistical survey. Looking again at the examples of practice arrangements in the Attachment, the usual ABS approach would be for each of the entities listed in the middle column to be defined as an "enterprise" and form the appropriate statistical unit for the medical industries survey. However, this standard approach will still not provide for the user views of how a medical practice should be defined as mentioned earlier. A major difficulty exists with the service providing entities listed in the right hand column of the Attachment. These entities are the major employers of support staff in the medical industries and need to be accommodated in the statistics. They may or may not be under the control of the medical practitioners to whom (or to whose practice entities) they provide services. Some debate exists as to whether they should be included in statistics for the medical industries or should be classified to other service providing industries. The argument is that their income earning activity is not the provision of medical services, but the provision of a range of receptionist, secretarial, bookkeeping, staffing, ancillary health services and business premises services to other entities which do receive income for providing medical services. However, our intention is that they should be included in statistics of the medical industries because to exclude them would have a major negative impact on statistics such as of employment, cost structures and profit. (Of note here is that the New Zealand Department of Statistics has found a similar type of unit and also treats them as classified to the medical industries).

20. Some explanation of the existence of the two types of service providing entities shown in the right hand column in the Attachment may be helpful. The two general types of these entities are -

a) The simpler types (called "service entities"), such as entity no.5, which serve the medical practice entities of only one practitioner, are established often to take advantage of the personal income taxation system provisions for splitting income between related persons. They are a legitimate taxation minimisation device, but for statistical purposes are preferably merged with the entity served as this provides a much more realistic set of data representing a single "business" or "practice" (eg entities nos.3 and 5 would be so merged). Entities such as no. 4 are effectively only shell entities with no assets, liabilities and having no activity other than as a conduit to distribute profits).

b) The second type (called "administration entities") present a more significant statistical problem. These entities are established to provide medical practitioners with considerable flexibility in their working arrangements with other practitioners. Unlike the use of a company or unincorporated partnership where practitioners have direct equity interests, the use of the administration entity allows for great flexibility (for legal contractual arrangements between participants, for taxation minimisation and for provision of superannuation purposes) when practitioners move into and out of working arrangements with other practitioners. So in the Attachment example of the arrangement set up by practitioners BB and CC, a third practitioner can be introduced to the arrangement by simply contracting with the administration entity (no.37) to work certain times and pay a certain agreed proportion of the revenue generated as a service fee. The equity interests of the pre-existing participant(s) is not disturbed. These administration entities can be established as cost sharing arrangements between practitioners, eg for practitioners Z and AA where the administration company (no.34) exists basically as a cost sharing non-profit making entity. They can also be established as profit making entities, eg the arrangements made by practitioners nos.BB and

CC , where only BB owns and derives a profit from the administration company. Charging rates between the various entities reflect the differing nature and objectives in their establishment and may or may not be set at commercial levels.

21. Of note in the Attachment, is the particular user interest in statistics about entities such as no. 31 (and the medical practice entities nos. 29 and 30 to which it provides services) where basically a medically or non-medically qualified entrepreneur runs a "medical centre" and contracts medical practitioners to provide services on a contract (ie non-employee) basis. Most or all of these medical practitioners have no equity interest in the profit making administrative entity. The practices conducted under such arrangements often open 24 hours per day and are seen by statistical users as having different characteristics and a much more commercial, profit oriented approach than standard medical practices. The structure of these arrangements can get complex, for example, where entity no.43 is involved in two such arrangements, probably reflecting medical practice work undertaken by practitioner GG at two separate surgery locations where unrelated administration entities are in operation.

22. An unresolved issue is in the treatment of entities such as no.7 which it could be argued is appropriately merged with no.6, as they are under common control and their separate existence probably represents a legal or institutional limitation (eg that hospital payments to contract VMOs are normally paid to individuals and not to their medical practice companies). This situation is very similar to the case of entities nos.16 and 17 which could not be formed into a single statistical unit as they are not under common control. This example could reflect the case where practitioners L and M are in partnership working at a single surgery location, sharing equally in the costs and profits at that location. Practitioner M also then works additional night shifts as an on call-locum, the income from which is derived and retained as an individual (ie the "sole practitioner", no. 17) as it is inappropriate for such income to be shared within the partnership arrangement. The ways in which such situations are structured appear to be very diverse.

23. Not shown as an example in the Attachment, but another common situation occurs where a medical practitioner receives a wage or salary as an employee as well as business income from practicing as a private medical practitioner. This situation only presents a statistical difficulty when the practitioner receives business (medical services) income when practicing as an unincorporated solo practitioner (such as practitioner A in the Attachment) and also receives a wage or salary, typically as an employee of a hospital. The usual statistical treatment is to separate the business (non-wage and salary) income into a statistical unit which is included in the industry statistics, effectively "splitting" the practitioner into private and business entities (the private entity is not included in industry statistics).

24. Following from the above discussion, the working definition of the statistical unit to be applied in the pilot testing and feasibility studies for the medical industries survey is -

The statistical unit for the medical industries is defined as

a) those unincorporated sole practitioner, partnership, company or trust entities whose activities are mainly the provision of general practice or specialist medical services, and with which is merged any entity providing mainly administrative, professional, property, secretarial or similar support services to only one of those entities, and

b) those legal entities providing mainly administrative, professional, property, secretarial or similar support services to more than one entity of the type described in a)

25. The statistical unit is therefore very much the standard legal entity unit familiar to economic statisticians. In effect, this will be the unit for statistical data collection (the input unit) as well as the publication (output) unit. In the interim we are calling this unit the "practice" for convenience of discussions with the user community, and it is equivalent to the "business" or "enterprise" unit used in economic statistics generally.

B. Classification Issues

26. There are several classifications appropriate to consider in developing surveys of the medical industries. The statistical issues involved in using these classifications do not appear, as yet, to present any major difficulties for such surveys.

i) Industry classification issues.

27. As noted earlier, the survey will relate to ANZSIC classes 8621 General practice medical services, 8622 Specialist medical services and 8631 Pathology services. The first two of these are linked to ISIC 8512 Medical and dental practice activities and the third is linked to ISIC 8519 Other human health activities. A difficulty that we have not as yet fully resolved concerns the inclusion of "pathological and other diagnostic activities carried out by independent laboratories" in ISIC class 8519 (and similarly in the ANZSIC). The difficulty in Australia is that there does not appear to be a situation where the medical specialists (classified to ISIC 8512) work independently from the laboratories. The work of pathology laboratories and diagnostic imaging centres is legally required to be supervised and verified by pathology and radiology medical specialists, so there may not be any "independent laboratories" as such. In effect we are not attempting a separation of these specialists from the laboratories in which they work/own. Our development work over the next few months may clarify this situation somewhat.

28. The industry scope of the medical industries in Australia and surveys of these industries, will vary slightly from that indicated in ISIC because of the use of the enterprise-type unit and some differences in the way that medical services are delivered. For instance, ISIC indicates that hospital out-patients clinics are included in Class 8512 while in Australia these clinics are an integral part of hospital entities staffed by hospital employees. Similarly, clinics attached to schools, firms, homes for the aged, etc are not likely to be common in Australia, and would not be included in surveys as they are not producing marketed medical services.

29. In effect, we will also be dividing the medical industries into sub-industry classes to meet the needs of users for a finer industry dimension than is reflected in the standard industry classes in the ANZSIC. This basically means that ANZSIC class 8622 Specialist medical services will be subdivided into about 6 sub-classes (like 5-digit industries) to reflect generalised groupings of medical specialist entities which often have differing features of interest to statistical users.

ii) Commodity classification issues

30. The commodity data to be collected in ABS surveys would effectively involve sub-categories of items within CPC subclasses 93121 General medical services and 93122 Specialised medical services. Following from the ISIC issue discussed above, the classification of specialist medical provision of diagnostic imaging and pathology services remains a problem in the CPC and the derivative Australian classifications compared to the way in which these activities appear to be organised in Australia. Further research over the next few months may help clarify this situation.

iii) Other classification issues

31. Several other classifications are being researched for their suitability for use in surveys of the medical industries. The major one is a classification of categories of specialist medicine occupations and occupations of the workforce employed in the medical industries. Existing standard occupation classifications are the starting point in this research. One issue is that new specialist medicine occupations (new specialties) are being created at a rapid rate. Of note is that there will be a difficulty in compiling any meaningful statistics which involve a practice (or business) size classification, because of the limitations imposed by the statistical unit definition to be applied, compared with user expectations of what a size classification in this industry should reflect. There is also a need to develop a classification of types of medical "practices" (as defined earlier) for the purpose of presenting the statistics in a meaningful way (ie to enable grouping of like entities for analytical purposes).

C. Data items to collect in medical services industries surveys

32. Earlier in this report there is an indication given of the requirements given by users of medical industries statistics and an outline of the main data items likely to be included on questionnaires. As discussed under the methodology headings below, it is planned to conduct surveys of both individual medical practitioners and of medical practices (businesses). Minimal research has been undertaken to date on the specific data items which will be collected and issues involved in their definition, however some comments are given below on the issues as currently known. It needs to be recalled that the dominant reason for collection of data from individual medical practitioners is to enable the construction of a register of the legal entities - "practices" - in which they are involved, so that financial data can then be collected from those legal entities.

i) Data to be collected about individual medical practitioners

33. The user community has sought statistics about individual practitioners include time worked categorised by different activities and types of practitioner, workforce data such as source of medical training and participation in various government initiated programs and possibly other demographic and professional characteristics. There are numerous problems in devising adequate data items to meet this need. Time worked information is particularly difficult as the self employed (the case for most medical practitioners) generally do not work fixed periods for agreed amounts. Unlike some other self employed professionals (eg accountants and lawyers) time records are generally not maintained. The overlap between "work" and "not work" is often blurred (eg time spent on-call, unpaid time, voluntary medical work, time spent travelling between workplaces, etc.). Other key data relates to income, and while there is a strong interest in the income of medical practitioners as individuals as well as the income of medical practices (which really cannot be adequately attributed to individuals) for sensitivity reasons we are not proceeding to attempt to collect income information about individual practitioners. The information we collect from individual medical practitioners will also give us a better understanding of their part-time full-time working arrangements and solo or group practice arrangements, which are little known from any adequate sources at the moment.

34. As the survey methodology explained below indicates, the key information we are planning to collect from individual medical practitioners involves listing details of each of the legal entities they use to derive medical services income, plus details of any entities providing services to these entities. this is to enable us to identify and then survey the relevant medical practice entities used by medical practitioners.

ii) Data to be collected about medical legal entities/practices (businesses)

35. As noted above, the specific data items that will be collected about medical legal entities/practices have not yet been finalised. In general, the core items will be similar to those collected by ABS in financial/economic surveys of other industries and are basically compatible with the key data modules which have been discussed in the Voorburg group context for Computing Services and other industries. Some issues which we will be specifically addressing and which do not necessarily need to be considered for other industry surveys are as follows -

i) We will need to maintain a clear distinction between the revenue and associated costs for non-medical services activities of entities in this industry, for example the non-medical business activities of companies which are mainly providing medical services. It has been usual to differentiate revenue in this way in other industries, but not costs. The requirement to do this is because of a strong user interest in the costs associated with the practice of medicine, not blurred by the mixing of other activities. It is planned to achieve this by design of the data items to be collected rather than the alternative of splitting statistical units.

ii) The data items will need to be designed to ensure the collection of unduplicated revenue (turnover) details for each separate medical services commodity (eg income from HIC rebates at scale level or above scale level, income from insurance work, income from medico/legal work, etc). Payments between entities in the survey will be separated (eg payments from a

medical services company such as 32 and 33 in the Attachment, to the administration company - 34) as these will be a major cost and revenue aggregates.
iii) There is some user interest in eliminating non-arms length transactions between entities, which can have a distorting effect on the statistics by artificially transferring profit between such entities. This is difficult to address, but will be partly solved by the statistical unit definition which involves merging entities such as nos. 9 and 12 (as discussed separately in this report).

iv) There is a user demand for statistics which reflect "full-time equivalent" labour input by the medical and support workforce and a strong interest in issues concerning the part-time workforce. Definitions of FTE and the practicability of its collection will need to be considered. This is a more widely recognised problem for such surveys, with the increasing use of part-time staff, job sharing, etc. There is a particular problem to consider in collecting workforce data here for the medical practitioners themselves. Many are self-employed (as a non-wage/salary earner) but many are also employed by companies that they themselves own. For example, practitioner EE in the Attachment will be shown in the statistics as working part-time as a non-wage/salary earner in entity no.40 and also as a part-time employed wage/salary earner in entity no.39, a medical practice company which this practitioner owns.

v) Certain data will need to be collected to enable weighting procedures within the complex sample design for the survey to be applied. In particular, it will be necessary for entities such as nos. 31, 34 and 37 in the Attachment, to be asked in the survey about the number of individual medical practitioners to which they directly or indirectly provide administrative services.

vi) Where an entity in the survey provides medical services or administration services which encompass more than one of the sub-industry classes we have defined, then additional data will be needed to enable this to be determined and the entity classified by its main activity. For example, if entity 8 in the Attachment is a partnership between a surgeon and a gynaecologist - different sub-industry classes, then we will need to collect data to determine that this is the situation so its magnitude can be measured. There is a similar situation where an administration entity (such as no.34) services medical practice companies (nos.32 and 33) that are classified to separate sub-industry classes, or possibly could provide services to entities classified to non-medical industries, such as pharmacy. All these situations are not believed to be common.

vii) It is planned to collect separate details of some of the major labour costs associated with principals who are employees of their own medical practice entities, which would otherwise be simply mixed in with costs of non-equity interest staff. In particular this relates to salaries and superannuation contributions for principals who are employees of their own medical practice entities (eg in the Attachment, individual practitioner B would be an employee of entity no.2 and the same applies for all other examples of this case). In these situations, the amounts paid to or on behalf of the individual practitioners is largely discretionary and often driven by taxation minimisation considerations.

D. Lists of units for a survey frame

36. To conduct a financial/economic survey of the medical industries a basic requirement is a comprehensive listing of the statistical entities (ie the practices or businesses) in those industries, from which a sample can be selected for the purpose of conducting a mail enumeration (non mail methodologies are not considered appropriate in this case). The usual source of such a list is the ABS Business Register, but in the case of the medical industries this source is wholly inadequate. This is due largely to the complexity of the differing practice arrangements entered into by doctors and described above, which have not been practicable to record in the Business Register, and the Register's exclusion of non-employing units, which are very important in this industry. Unfortunately, there is also no alternative list of the relevant statistical units (eg legal entities) available from some other source, such as a list broker, licensing/registration authority or the Australian taxation system. The way in which we are proposing to overcome the lack of a list of units is indicated below

Survey approach to be adopted for the medical services industries

37. The statistical unit complexities and the lack of a suitable population frame as a basis for selecting units to be included in the survey, are discussed above. Consequently, to compile economic/financial statistics, the only viable alternative we can envisage to overcome these difficulties involves a complex procedure. Firstly, we will obtain a list of individual medical practitioners (which is readily available) then we will conduct a survey of a sample of these practitioners to identify all the legal entities in which they are involved (including any service and administrative entities). Then a register can be established containing these legal entities and these would all then be subsequently surveyed to collect the data we are primarily seeking (such as income, employment, costs, profit, etc) for "practices". This we have called the **"two phase survey approach"**. We have not been able to identify an alternative to this approach, including consideration of using taxation sources or administrative by-product sources to overcome the lack of a suitable survey frame and to identify the various legal entity relationships necessary to define practices. The Australian income taxation system is not suitable because of deficiencies such as there being no linking of the various entities used by medical practices to conduct their practices, the industry classification of service/administrative entities is unclear, the data held is not sufficiently detailed, etc. There are still many conceptual and methodological unknowns in this procedure so we are planning to conduct a pilot test, or more a dress rehearsal, survey, before embarking on a full national survey. Both the pilot test (A below) and the full national survey to follow (B below) involve using the two phase survey strategy.

38. Our current survey strategy is basically as follows:

A) Test the feasibility of the Australia-wide national survey of medical industries during 1994-95 by conducting a pilot survey of data collection from a sample of medical practitioners in the State of South Australia (Phase 1) and the legal entities/medical practices that they so identify (Phase 2). Features of this pilot survey would include -

- The pilot survey would be conducted as a sample survey of the medical industries in South Australia, with data collected in respect of 1993-94 from some 400 practitioners in Phase1 - about 10% of the medical practitioners in that State.
- The test would be used to validate the questionnaires, operations, sample design and other methodology and systems, and as a test run of the ability and willingness of medical practitioners to participate in the survey. Experience gained in the pilot survey would be used to determine the detail and viability of the national survey in the following year.
- It would be conducted as a standard ABS collection under the usual confidentiality (and compulsion) provisions of the Census and Statistics Act 1905.
- This pilot would collect data for the year 1993-94 and we would aim to produce some statistics which would be available for users to more easily identify and consider the sort of statistics that would be compiled from the national survey.
- An objective would be for the practitioners selected in the pilot test sample survey in South Australia to not again be selected when the national survey was conducted in the following year.

B) Conduct a full Australia-wide mail-based sample survey of the medical industries during 1995-96 with statistics compiled in respect of 1994-95. This will involve -

- **Phase 1** survey conducted in the period June to December 1995, which will be a sample survey of about 10% of all individual medical practitioners, seeking from them details of their medical practice arrangements and data appropriate to collect from individuals, ie income, time worked in different practice arrangements, other demographic details. Statistics from this Phase would be produced at about May 1996.
- **Phase 2** survey conducted in the period January to June 1996, which will be a mail-based survey of all the legal entities/practices that were identified by the practitioners selected in the Phase 1 survey. This survey would collect data about income by type of income, expenses, employment details, and other information that is appropriate to seek from the financial and

other records of companies, partnerships, etc. Statistics from this Phase would be produced at about February 1997. (Both Phases would be conducted as standard ABS collections under the usual confidentiality (and compulsion) provisions of the Census and Statistics Act 1905)

39. There is a variation to this plan in the case of the pathology segment of the industry, and possibly in relation to diagnostic radiology. It is apparent that pathology activities are conducted in Australia under arrangements much more akin to the way in which (large) businesses are structured and organised in other industries rather than in the way that other medical practices are arranged. Medical pathologists in private practice operate in a similar way to business entrepreneurs in other industries and provide services at the behest of other medical practitioners rather than as a result of face to face contact with patients. Consequently, for this segment of the medical industries we will be using the ABS Business Register as the survey population frame rather than the Phase 2 strategy noted above. While pathology practitioners will be included in the Phase 1 survey for completeness, they will not be asked for details of the legal entities with which they are involved. It is likely that we will conduct a full enumeration of pathology entities as while there are some quite large businesses involved, the total numbers are small (perhaps 150 businesses) and there are known to be numerous complex relationships between the various legal entities that require some further examination. The situation may be similar for diagnostic imaging, but our research on this segment of the medical industries has so far been limited.

Methodological issues

40. Due to the complexity of the statistical units and the lack of a suitable register (population frame) of the entities included in the medical services industries, the strategy described above raises some new methodological issues which will need to be resolved as part of the development of the survey.

41. The major methodological issues different to surveys of other industries, involve the sample strategy and design. The work undertaken so far has only proceeded to the point where it has been determined that it is feasible to design a sample and methodology which can produce adequate estimates from both the Phase 1 and 2 surveys described above. Ideally, in the absence of a satisfactory practice (business) frame/register, we should construct such a frame via a survey of all individual medical practitioners, incorporating all the entities and situations described in the Attachment to this report. This would be far to costly a survey to conduct. Consequently, a sample of individual practitioners only will be surveyed and all these selected practitioners will provide details of their practice legal entity arrangements as the main element of the Phase 1 survey. This represents a quite straightforward design as we have full population details for the individual practitioners and can stratify the units appropriately, eg by region, medical specialty, etc. A range of statistics will also be derived from this Phase 1 survey of individual medical practitioners.

42. All the practice legal entities identified by practitioners in the Phase 1 survey will then be included in the Phase 2 survey. The weighting of the entities in Phase 2 will be dependent on the chance of selection of the individual practitioners in Phase 1. This will mean that some additional data will need to be collected in the Phase 2 survey. For entities of the type in the middle column in the Attachment to this report we will need to know the number of medical practitioners as employees or as self employed. In situations such as for entity no.8, either or both of practitioners E and F may be selected in the Phase 1 survey sample, and this will need to be known. For administration entities of the type listed in the right hand column of part D of the Attachment (eg nos.31, 34, etc) we will need to identify the number of individual medical practitioners served (eg X and Y served indirectly by entity no 31, etc), regardless of which were selected in the Phase 1 survey. There will need to be a new sample design developed to enable statistics to be compiled from the Phase 2 survey as this scenario is unlike the situation found in other industries.

43. To conduct the surveys efficiently and enable the weightings in sample design to work, the units in Phases 1 and 2 will need to be linked. We will need to identify whether, for example, only one or more than one of practitioners I, J and K were selected in the Phase 1 sample. If more than one of these practitioners were selected we need to avoid sending out more than one questionnaire to entity no. 15. For collection management and data quality control purposes, if practitioner EE were

selected in Phase 1, then in the Phase 2 collection we need to ensure some linking of entities nos. 39, 40 and 41, which would all separately be included in Phase 2. If more than one practitioner in this arrangement were selected in Phase 1 (eg both DD and EE) then we would need to avoid sending more than one questionnaire to entity no. 41 and also maintain linkages between all the entities in the practice arrangement. These sorts of collection management issues and sample design matters have not yet been fully developed, but will be as part of the pilot testing now beginning.

Statistical output

i) Statistics from the Phase 1 survey of individual medical practitioners

44. As the Phase 1 survey is to be directed at a sample of medical practitioners, the information collected from them would need to be limited to that which can reasonably asked of an individual about themselves and their medical practice arrangements. The questions planned to be asked are as follows -

a) Practice arrangements Questions will be asked which will identify names, addresses and other indicative information about each of the legal entities from which is derived income from the practice of medicine or provides administrative or other services to such entities.

b) Time worked

Questions will be asked about the time worked by practitioners relating to hours worked over a specified period and categorised by the type of practice arrangement and broad type of work involved.

c) Demographic-type data

Questions will be asked about medical specialty, source of training, whether working in a solo, group or associateship arrangement, and some related matters.

45. It is expected to be possible to produce statistics which classify medical practitioners by medical discipline or specialty (GPs, various categories of specialty), by geographic region (at least for Australian States and territories separately and depending upon the size of the sample of medical practitioners, for smaller regions), by gross billings size and time worked, and by different type of practice arrangements used (eg solo practitioner, etc).

ii) Statistics from the Phase 2 survey of medical legal entities/practices

46. The basic questions planned to be asked, from which statistics will be derived are as follows -

a) Revenues from the provision of medical and other services. A number of sub-categories are relevant, tailored to the situation in Australia. These reflect the main income streams, which would effectively be divisions within CPC subclasses 93121 General medical services and 93122 Specialised medical services. The classification of specialist medical provision of diagnostic imaging and pathology services remains a problem in the CPC/ISIC and the derivative Australian classifications compared to the way in which these activities appear to be organised in Australia. This revenue data is a key requirement. (Equivalent to a Model Survey Module 1, as proposed for other service industries)

b) Costs associated with the operation of medical practices. There are likely to be some 20 separate costs identified. This cost data is a key requirement. (Equivalent to a Model Survey Module 2)

c) Purchases of goods and services for resale. This data is a minor requirement. (Equivalent to a Model Survey Module 3)

d) Inventories. This data is a very minor requirement which is of little relevance in this industry, except probably for the pathology and diagnostic radiology sectors. (Equivalent to a Model Survey Module 4)

e) Supplementary questions concerning the basis of accounting. This data may not be collected although there is a problem of as yet unknown magnitude because of the use of cash rather than the preferred accrual basis of accounting. (Equivalent to a Model Survey Module 5)

f) Employment. Numbers of persons in the major occupational groupings are to be sought. The preference is for full time and part time numbers to be identified but also "full time equivalents", which presents as yet unresearched issues to be resolved. This data is a key

user requirement. (Equivalent to a Model Survey Module 9)
g) Fixed assets, additions, disposals. This data, and other balance sheet data generally, is a relatively minor requirement for the main part of this industry, perhaps except for the capital intensive pathology and diagnostic imaging sectors. (Equivalent to a Model Survey Module 10)

The other draft Model Survey Modules are generally not applicable to the medical industries (ie imports and exports, R&D, etc). However, there may be some additional data collected specific to the medical industries, such as details of the physical characteristics of the surgery locations at which the practice operates, the particular types of services provided, charging bases, opening hours, etc.

47. From the basic data collected it will be possible to derive various net measures of practice profits, profitability and operating and performance ratios. The statistics compiled will be able to be classified in various ways. An important set of statistics will involve classifying the legal entities/practices by the type of "industry", ie GPs and about 6 or 8 categories of specialists. In particular, for purposes of looking at practice costs, not only are these "industry" categories important, but also a classification by the type of practice entity will be necessary. Such streaming of the output by different types of practices is needed to minimise the distortions in cost structures resulting from the aggregation of unlike entities, eg the separate categories in the classification would have to include (for example) categories for -

a) administration entities providing services to >1 medical practices entities (eg entities of a type like no.34 in the Attachment)
b) solo unincorporated practices not in a group arrangement (eg entities of a type like no.1)
c) solo unincorporated practices in a group arrangement (eg entities of a type like no.40)
d) solo incorporated practices not in a group arrangement (eg entities of a type like no. 2)
e) solo incorporated practices in a group arrangement (eg entities of a type like no.33)
f) partnership practices (eg entities of a type like no. 8)
- and so on

48. How such a classification can best be structured is still subject to some research, and the results of the pilot test survey. Such a breakdown is necessary to minimise the distorting effect of aggregating unlike entities and particularly as a basis for more detailed analysis of the features of quite different types of practice arrangements by statistical users. The practice statistics could also be presented by State and Territory and possibly for regions within these, depending on the detail that the size of the statistical collection will support. However, statistics showing size of "practice" remain problematical.

Conclusion

49. The work outlined in this report represents research-in-progress. There are still a number of statistical and other issues to be resolved. Of major importance is the question of whether the user community can sufficiently understand just what this all means in terms of the statistics they will see at the end of the survey. Further work has to be undertaken to consider and explain what statistical output will be achieved to the user community. The pilot test will also have a role to play in achieving their greater understanding of the statistics that will be generated. Unfortunately, it is still not completely clear just how far the approach adopted and reported in this paper will go towards satisfying user requirements.

Medical Services Industries
Typical medical practice arrangements

1. This Attachment shows the main known situations of the legal entities used by medical practitioners to conduct their practices. Combinations of the different circumstances are also known to exist.

2. Individual medical practitioners (shown in circles) have been given a unique alpha character and the "legal entities" (shown in boxes) a unique numerical character for ease of discussing the various arrangements in the report. Equity (or equivalent) ownership links between the individual practitioners and the entities used to conduct their practices have been shown with a solid line. Where an entity provides services to another (property, employment, administration and similar support services) and without an equity ownership link, this is shown by a broken line.

3. The typical arrangement in Australia in which medical practitioners work are:

A. Solo (i.e. not in conjunction with other practitioners).

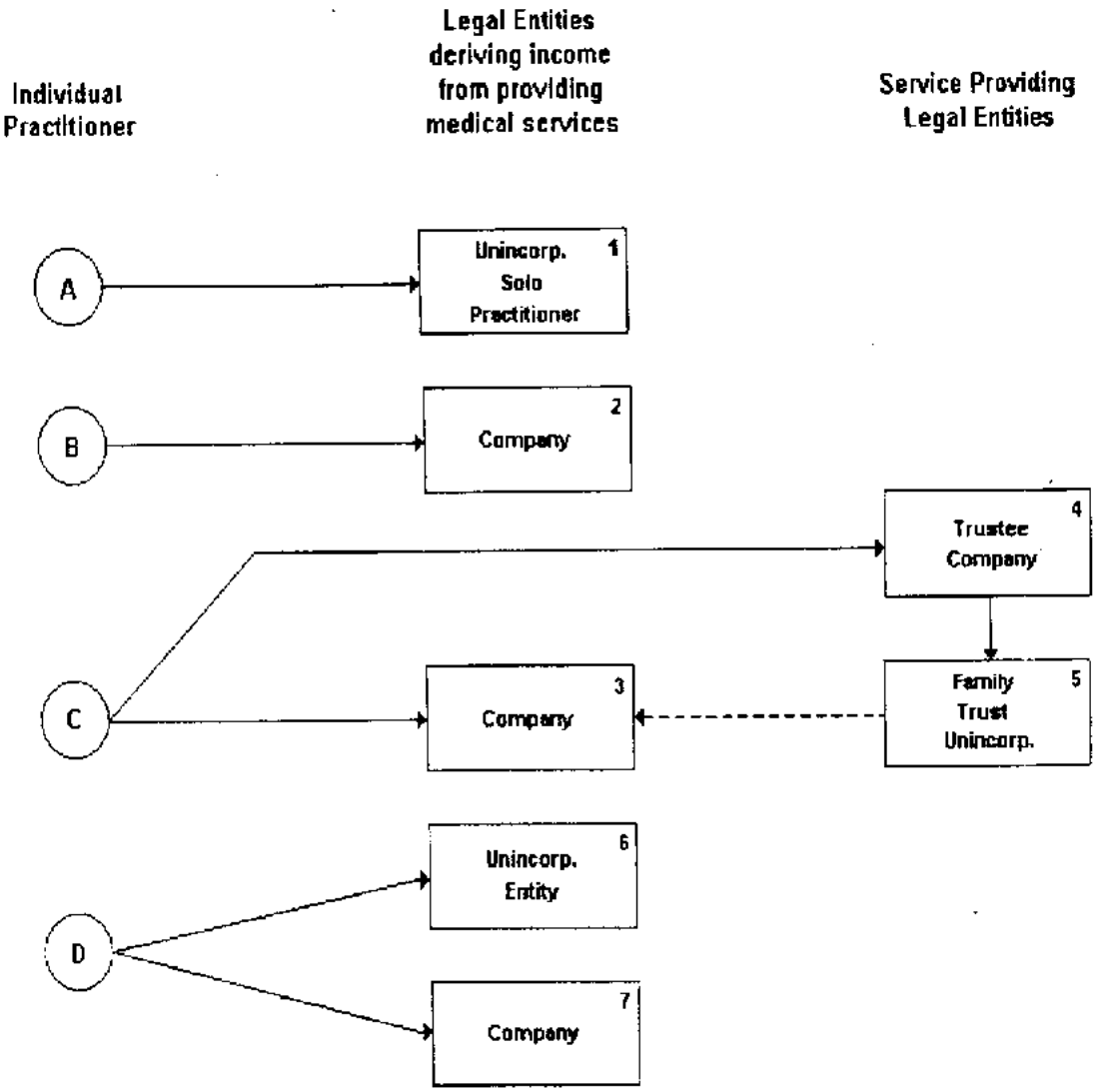
B. Partnership (i.e. working with other practitioners using a formal partnership agreement to share profits).

C. Company (i.e. working with other practitioners using an incorporated company structure).

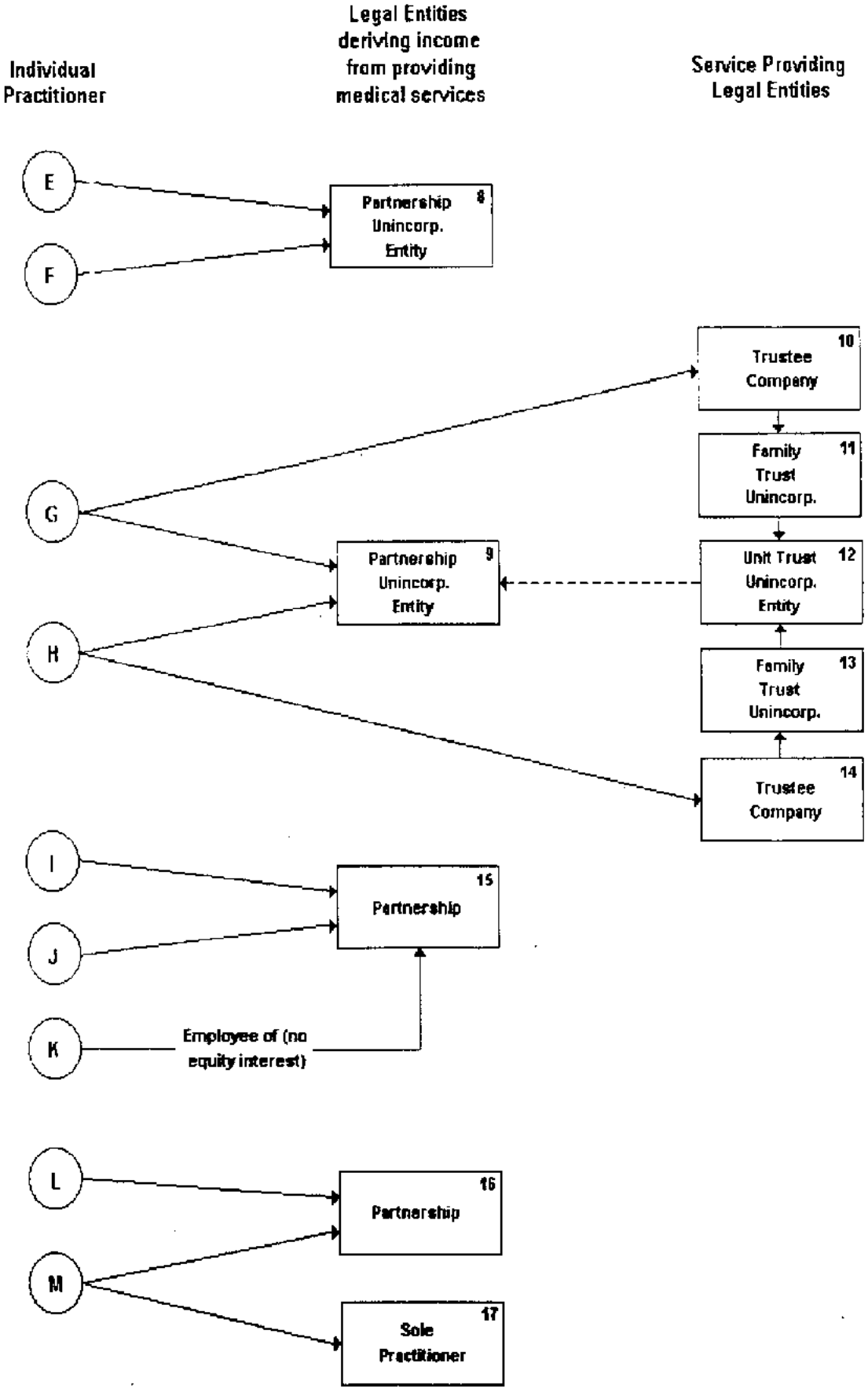
D. Associateship (i.e. working with other practitioners with costs shared by the use of an administration company with each practitioner having their own entity within which they practise medicine).

4. These four types of arrangements reflect a classification of the broad ways in which medical practitioners work together in Australia, as sought by the main users of statistics of these industries. Within each of the four types of arrangements, there are many combinations and permutations of legal entity relationships used. These are not all well known or fully researched. Examples of the main types of arrangements known are shown in the diagrams, but some simplifications has been necessary to minimise confusion. Many other combinations of situations, such as practitioner (C) also having an entity such as (6), are also known to exist. The situations shown in sections (B) Partnerships and (C) Companies, are known to be less commonly used by medical practitioners to structure their practices, than some of the situations shown in sections (A) Solo practitioners and (D) Associateships.

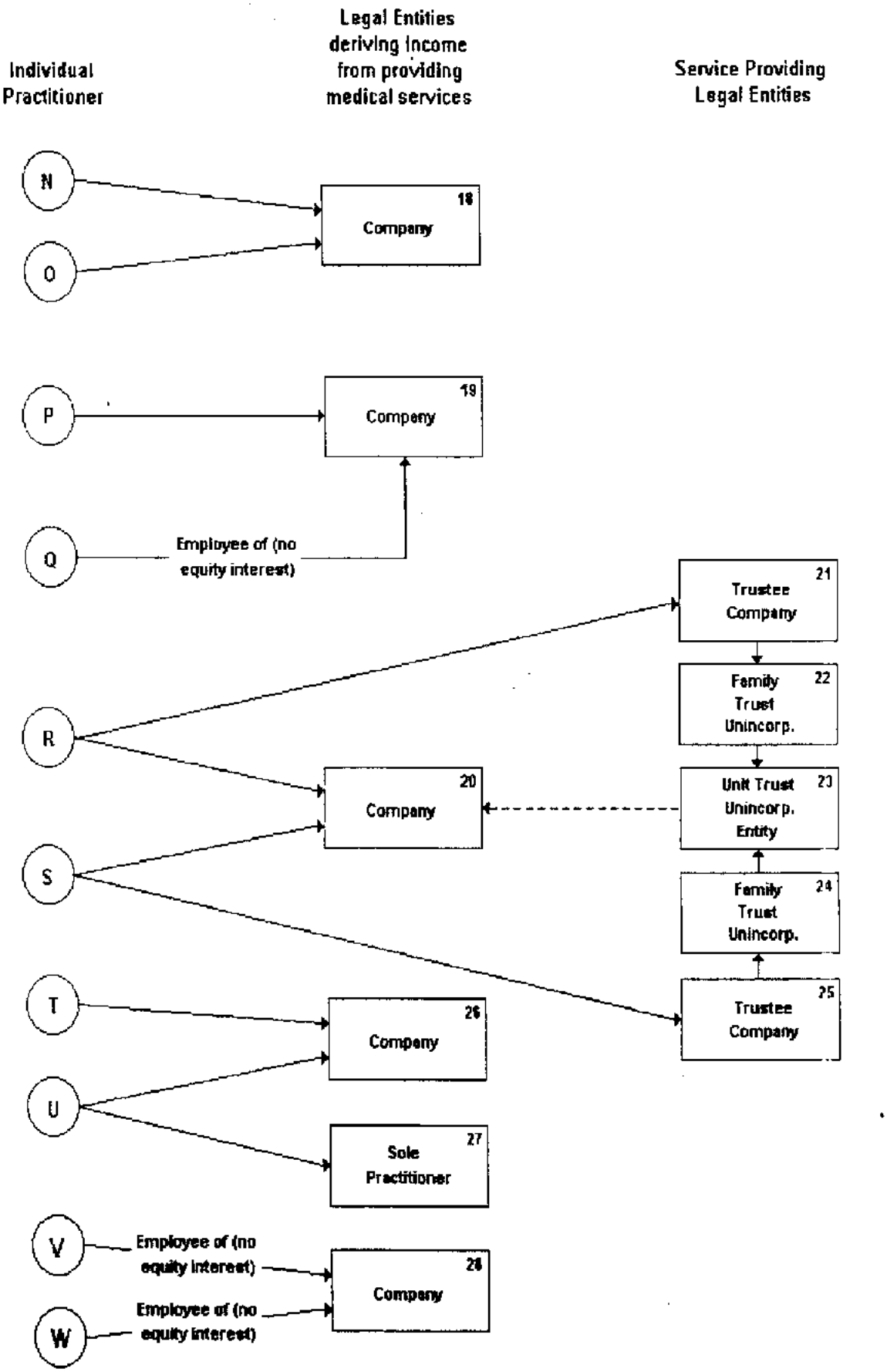
A. MEDICAL PRACTITIONER WORKING SOLO (NOT WITH OTHER MEDICAL PRACTITIONERS)



B. MEDICAL PRACTITIONER WORKING IN A PARTNERSHIP ARRANGEMENT WITH OTHER MEDICAL PRACTITIONERS



C. MEDICAL PRACTITIONER WORKING IN AN INCORPORATED COMPANY STRUCTURE WITH OTHER MEDICAL PRACTITIONERS



D. MEDICAL PRACTITIONER WORKING WITH OTHER MEDICAL PRACTITIONERS IN AN ASSOCIATESHIP ARRANGEMENT