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UPDATE OF AUSTRALIAN EXPERIENCE IN THE DEVELOPMENT OF SURVEYS OF MEDICAL SERVICES

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INTRODUCTION

1. This paper provides an update of Australian experience in the development of surveys of medical services. It outlines the lessons of a large scale pilot study of private medical practitioners conducted in South Australia in respect of the 1993-94 reference year, and the subsequent development of a national private medical practitioners survey for 1994-95.

2. A detailed report on research in progress on medical services industries was presented at the ninth meeting of the Voorburg Group, held in Sydney, in October 1994. The report, which outlined issues concerning statistical units, classifications, data items and coverage, provides a starting point for this paper. It is suggested that readers refer to the 1994 report if they wish to have detailed background on some of the issues referred to in this paper.

SOUTH AUSTRALIAN PILOT STUDY

Objectives

3. The primary objective of the 1993-94 pilot study was to test the feasibility of the Australia-wide survey planned for the following year. The pilot study sought to:

1. Validate the questionnaires, collection methodology, operations procedures, sample design, systems, etc, for the national survey.
2. Test the ability and willingness of medical practitioners to participate in the survey.

4. As table 1 shows, five of the eleven modules of the model survey concept were collected in the South Australian pilot survey. These are also scheduled for collection in the national survey.
Other items were omitted due to lack of user demand (and a particular requirement to minimise respondent load), or because investigations indicated that they were not relevant to the industries surveyed.

Scope

5. The initial scope of ABS research into medical service industries included ANZSIC classes 8621, General medical practices; 8622, Specialist medical services; and 8631, Pathology services.

6. An issue foreshadowed in the 1994 paper was the inextricable interaction of pathology services and associated specialist medical services. In Australia the work of pathology laboratories and diagnostic imaging centres is legally required to be supervised and verified by pathology and radiology medical specialists. It was therefore judged more appropriate from a sample design perspective to collect information on the activities of these centres through the initial selection of the pathology and diagnostic specialists. ANZSIC 8631 was therefore excluded from the scope of the pilot, and the subsequent national survey.

Table 1: Australian Private Medical Practitioners Survey, Modules of the Model Survey Collected

ModuleNo.	Description	Collection Status
1	Revenues from sales of goods and services	Detailed income items collected
2	Goods and services used in operation	Detailed expense items collected
3	Purchases of goods and services for resale	Not collected - not considered relevant to medical industries surveyed
4	Inventories	Not collected - not considered relevant to medical industries surveyed
5	Supplementary questions concerning basis of accounting	Not collected - not required by user organisations
6	Exports	Not collected - not considered relevant to medical industries surveyed
7	Imports	Not collected - not considered relevant to medical industries surveyed
8	Supplementary questions	Considerable supplementary activity data collected in Phase 1
9	Employment	Collected
10	Fixed assets, additions and disposals	Collected
11	Research and development	Not collected - not required by user organisations

7. The second issue relating to the scope of the survey identified early in its development was the overlap between medical services provided by medical practices (the businesses of private medical practitioners) and those provided within the eight State based hospital systems operating in Australia. The circumstances and arrangements under which doctors practise within each of the State systems varies considerably. A further complication is that many doctors have a dual role as hospital employees (working on a salaried basis), and as a private medical practitioner earning fee for service income from private patients they see in the hospital.

8. Because of the availability of considerable administrative information (incomes, patient throughput, qualifications, etc) on salaried doctors working within the hospital systems, the scope of the survey was, after consultation with primary users, further narrowed to include only those general practitioners and specialists mainly in private practice . Predominance was determined on the number of hours worked per week on private (generally fee for service) patient activities. These included private practice administration and management.

Coverage

9. The primary coverage source for most ABS business unit collections is the Bureau's Business Register. The Register provides the basic population frame for almost all ABS service industries collections. For most services collections the population drawn from the Register is supplemented with units from industry-specific sources, but for some industries (where the statistical units supported by the Register are not appropriate to the organisational arrangements typical of the industry) alternative frames

have to be used. The main example prior to the medical survey was the 1992-93 survey of the legal profession where lists of solicitor/barrister businesses were used as the main population source.

10. Early investigation work on the medical services survey indicated the shortcomings of the Business Register for this industry. This was due largely to the complexity of the various practice arrangements entered into by doctors (described in detail in the Attachment to the 1994 paper) which were not adequately captured on the Register, due to difficulties in identifying the linkages, and the Register's exclusion of non-employing units, which are very important in the medical industry.

11. Extensive research also showed that there was no existing list of the relevant statistical units (e.g. "doctor/medical businesses"). The only viable approach was to conduct a two phased survey (described in detail below). This involved the construction of a frame of in-scope doctor businesses from a comprehensive list of medical practitioners from the Health Insurance Commission (HIC), an Australian Government funded instrumentality.

12. The HIC list of medical practitioners was considered ideal for the first phase as it provided complete coverage of doctors who received a fee for private practice medical service within a specified time period. Non-practising doctors, and doctors working entirely within the State hospital systems on a salaried basis could be excluded.

Methodology Issues

13. Two Phased Approach: As stated above a two phased collection methodology was tested in the pilot survey. Phase 1 forms were despatched to a sample of 400 "private practice" general and specialist medical practitioners in October 1994.

14. Although detailed data on the characteristics of the medical practitioner were obtained in the Phase 1 form, its main function was to identify the medical businesses within which the doctors were working and for which accounting records would be maintained.

15. The Phase 1 form sought the following information:

About the medical practitioner:

- Date of birth
- Gender
- Whether general practitioner (GP) was vocationally registered
- Whether currently undergoing medical training under a training program available in Australia
- Accepted principal speciality of specialist.
- Whether primary medical qualification was from an Australian university
- Estimated total hours worked by practitioner in an average working week
- Dissection of total hours worked into around 12 activities.
- Estimated number of private patient consultations/contacts for an average working week
- Whether the practitioner received grants for a number of government sponsored schemes
- Number of doctors working at main work location.

About legal entities within which the doctor was practising private practice medicine:

- Type of work arrangement which was the doctor's major source of medical income, e.g. mainly not private practice, mainly in private practice (sole practitioner, partnership, incorporated company, etc)
- Name/address of sole practitioner, partnership, incorporated practice company
- Name/address of legal entities providing administrative services to the above legal entities.

16. Phase 2 involved the despatch of a new set of questionnaires to the legal entities (both medical businesses and their associated service entities) identified in Phase 1. Forms for the pilot study were despatched to around 380 medical businesses in February 1995.

17. In addition to the standard ABS structural items (detailed components of income/expenses, assets/liabilities, capital expenditure/disposal of assets, etc) the Phase 2 forms also sought:

- Details of main activity of medical business, based on income
- Whether the business provided diagnostic imaging services
- Detailed dissection of employment at 30 June 1994 by whether full-time/part-time, e.g. number of doctors, allied health professionals, nurses, administrative support staff, etc.

18. Forms Used: One form type was used in Phase 1 to collect information from both general practitioners and specialists. Four form types were used in Phase 2, one for each of general practitioner and specialist doctor medical businesses, and one for administration entities. Another Phase 2 form type was despatched to pathology and diagnostic imaging medical businesses, due to the different composition of income/expense items, more extensive asset holdings, etc,

Major Form Design Issues

Phase 1

19. Identification of medical businesses: By far the most difficult element of the Phase 1 forms design was development of appropriate (and succinct) wording of the questions to identify the nature of the medical legal entity within which the doctor operated. The sheer diversity and complexity of the accounting arrangements made the task almost insurmountable.

20. The pilot study confirmed the complexity of the legal entity and accounting arrangements within which private practice medicine is conducted in Australia. Given the primary aim of Phase 1, to identify the units for which accounting records were available, the primary problem was that many of the doctors approached in the pilot study were only obliquely aware of the record keeping arrangements set up and maintained by their accountants. Many of the respondents tended to confuse the concept of the medical practice (which often involved a number of separate doctor medical businesses) with the legal entity.

21. Confusion with these questions resulted in the need to query almost all Phase 1 pilot forms. Considerable effort was also invested in verifying the data reported on those returns that were seemingly correct.

This was done during telephone query action, and by personal interview during a post enumeration study of a sub-sample of respondents.

22. The experience of the pilot study resulted in extensive modifications to these questions. Detailed descriptions of the main types of medical businesses (e.g. informal practice arrangements, partner in a formal partnership, incorporated medical business or trust, administrative service companies/trusts, etc) were provided, together with advice on how these arrangements were to be reported on the Phase 1 forms. The layout of the questions was improved to make the intent of each question more obvious. Finally, a number of check questions were included to ensure consistent reporting, and subsequent exclusion of those doctors that were out of scope e.g. those predominantly working as salaried medical officers in hospitals.

23. Dissection of hours worked: There was also considerable difficulty in developing an appropriate dissection of total hours worked. This was crucial in determining whether or not a doctor was working predominantly in private medical practice. The major difficulty was developing the appropriate questionnaire wording to distinguish between hours worked as a salaried medical officer in hospitals, and those worked in hospitals in the treatment of private patients, etc.

24. Although a 95% response rate was achieved in the study, extensive modifications were made to the Phase 1 pilot forms for the national survey. These changes were tested in extensive respondent field tests.

Phase 2

25. As indicated above, the main purpose of the Phase 2 forms was to collect detailed structural financial data about medical business in Australia. There is already a significant amount of information available on the incomes (generally gross incomes) of medical practitioners, however very little is available on the costs of running a private medical practice (and resultant net incomes). Users in both government and the medical associations were interested in the differences in the income/cost, employment, and business structures of general practitioners, and of the main types of specialist medical businesses. In particular, the industry associations wanted the survey to include the key costs ie the salary costs (for administrative, nursing, etc, staff) and the accommodation costs associated with these medical businesses.

26. Finally, users wanted to identify differences in these areas flowing from the different government administrative arrangements in each of the eight Australian States.

27. The main difficulties experienced with the Phase 2 forms in the South Australian pilot study arose from incorrect medical business units being reported during Phase 1.

28. All of the major data items collected during Phase 2 are available on standard accounting records maintained for most medical businesses. The data items and dissections used in the forms designed for the national survey were also tested during extensive discussions with respondents, and a number of accounting firms specialising in medical businesses were consulted.

29. Administration/service entities: To meet the user need to include all cost and employment details associated with private medical practice, information had to be collected from associated administration and service entities. These entities were identified during Phase 1.

30. Assuming that units information about service entities is correct, the main Phase 2 forms design issue was to ensure that arrangements between "doctor businesses" and their service entities accurately recorded the transactions between the entities and did not result in the double counting of incomes. The pilot study showed that, in most cases, fee for service income was paid to the doctor business and not to the service entity. Medical businesses then paid a management fee to the associated service entity. In a minority of cases the income flows in the opposite direction, i.e. fee for service income is paid to the service entity which then makes a "net" payment (after deducting costs) to the doctor business.

Estimation Procedures

31. Phase 1 of the survey involved a simple number raised estimation based on a random sample of doctors stratified by speciality. As a result each unit in the sample population had its response weighted to represent the response from the not selected units in that speciality. The weight of each unit reflecting the proportion of the population that the sampled unit represented. For example, if out of 300 units in the population 50 were selected then each selected unit would have a weight of 6. The non-respondents were estimated using the stratum average.

32. In the National survey the population of doctors was stratified by state and activity indicator (low and high activity) in addition to speciality.

33. All businesses (with the exception of the pathology businesses) identified in Phasel of the survey were selected in Phase 2. A sample of pathology businesses was selected from a complete frame of pathology businesses thus a number raised methodology was available for estimation of the pathology output.

34. Because the complete frame of the non-pathology businesses wasn't available the weight for these medical businesses had to be based on the first phase weights. It was derived as, the sum of the first phase weights of all doctors that identified the particular medical business in phase 1, divided by the number of doctors who were involved with that medical business (a data item collected in the phase 2 survey).

35. In other words, Phase 2 non-pathology output of a medical business, such as income and expenditure, was apportioned equally to those doctors who were involved in the business and then extrapolated to represent the rest of the doctors on the frame thus representing the complete population of businesses which would have been identified by the doctors on the frame.

36. For example, if 10 doctors were involved in a medical business X and that business's income was $100,000 then each doctor would be attributed $10,000, if only 1 of the 10 doctors was selected in Phasel and that doctors' weight was 5 then business X would contribute 50,000 to the estimate of the medical businesses' income. If two doctors were selected from the business X, both with the weight of 5, then business X would contribute 100,000 to the estimate of the medical businesses' income. It

can be proved that this method provides an unbiased estimate of the businesses' output.

37. The non-respondents were estimated using an average within the corresponding form type.

Industry Association Discussions

38. An essential element of the development of both the pilot study and the subsequent survey was the visit program to the myriad general practitioner and specialist medical colleges, associations and societies.

39. The objectives of these discussions were to:

- Obtain information on their data requirements. As mentioned above the medical industry associations were particularly interested in accurate/complete collection of the costs of medical practice. Emphasis during the discussions on the confidentiality of unit record information, and that the organisations would have the same degree of access as government to aggregate information from the survey, did a lot to placate initial suspicions about the ABS collection.

- Obtain information about the structure of private practice medical industry, and details of correct terminology, etc.

- Enlist their help in publicising details about the ABS collection in journals/newsletters despatched to their members so as to ensure a good response to the survey.

40. Pilot study experience showed that many doctors contacted their relevant medical association upon receipt of the ABS forms. Considerable effort was therefore put into ensuring that these organisations were fully conversant with the forms, reasons for the survey, etc. As a result, the medical organisations themselves were able to allay many of the concerns of their members. As noted earlier the response to the South Australian Pilot Survey was 95% for Phase 1, and similar for Phase 2. These response rates were comparable to those for other service industries collections and were achieved with a similar level of telephone contact. One of the problems confronted in follow up of non-response and query action was the non-availability of the doctors during normal business hours due to work commitments.

SUMMARY

41. Based on the lessons learnt from, and overall success of the pilot survey, it was concluded that a survey of medical practitioners was feasible and that reliable data for the industry could be compiled.

42. Despatch of the Phase 1 forms for the national Medical Practitioners Survey took place in early July 1995. Forms were sent to about 3,500 medical practitioners in all States. At the time of writing (late August) about 80% of forms had been received. Despatch of the Phase 2 forms to the medical businesses identified in Phase 1 will occur during October 1995.

43. The main lessons from the South Australian pilot study were that:

- It is possible to devise a questionnaire that collects units information about medical businesses - up to a point; it is very difficult to develop a succinct set of questions that will provide accurate units information for the most complex of medical practice legal entity arrangements. Fortunately, these constitute a small number of medical businesses operating in Australia, though they tend to be the largest.

- A more realistic strategy is to design a set of questions that collects reasonably accurate units information on the great majority of medical businesses, and to include questions that identify the most complex for telephone query action before the despatch of the Phase 2 forms.

- Because of extensive government involvement in the operation of the national health system (in both the operation of hospitals, and national health insurance schemes, etc) considerable development lead time is required to investigate/identify the administrative environment in which private medical practitioners work. This has considerable impact on the legal entity/accounting structures they set up to record expenses, incomes, etc. Variations in the operations of State based medical administration added to the complexity of the environment in Australia.

- Development of the national Medical Practitioners Survey (including development of the pilot study) took around 18 months.

- Considerable effort should be put into gaining the co-operation of medical colleges, associations, etc. This effort is repaid in higher response rates and data quality. The main areas of concern in Australia involved issues of confidentiality, and that information from the survey would be used to highlight the high gross incomes of medical practitioners. Almost all of the organisations visited by ABS officers during the development of the survey were particularly keen to ensure that the income items were balanced against the high costs of running a medical practice.

- Many of the organisations consulted will be keen users of output from the collection.