Medicare Australia data for research: an introduction

What is CREST?

The Centre for Health Economics Research and Evaluation (CHERE) at UTS has been contracted by Cancer Australia to establish a dedicated **Cancer Research Economics Support Team (CREST)** to provide high quality, expert advice and support to Multi-site Collaborative Cancer Clinical Trials Groups.

Factsheets

CREST will produce a series of factsheets as resources for cancer collaborative group researchers wishing to include economic evaluation in their clinical trials.

Authors: Kees van Gool, Bonny Parkinson and Patsy Kenny

Prepared: July 2011
Updated: November 2015

SUMMARY

The data held by Medicare Australia can be of significant value as a complementary source of information to trials or observational studies. This factsheet provides an introduction to the use of this data for research.

- An explanation of the Medicare and PBS data is covered in Sections 2 and 3 respectively.
- Section 4 considers the strengths and weaknesses of Medicare and PBS data and sets out some issues to consider before deciding to use the data.
- Section 5 provides examples of how other researchers have used Medicare and/or PBS data in published studies.
- Section 6 provides information about how to access Medicare and PBS data, both individual level data on consenting study participants and aggregate statistics.

For more information about CREST, or for other factsheets in this series, please see our website:

www.crest.uts.edu.au

Medicare Australia data for research: an introduction

Why consider using Medicare Australia data in your study?

1. Purpose

The purpose of this fact sheet is to inform readers about Medicare Australia[1] data. These data can be of significant value as a complementary source of information to trials as well as observational studies. In many ways, Medicare Australia data are the most accurate source of health care data in this country. Their reliability is due to the fact that the data are collected as part of the Medicare and Pharmaceutical Benefit Scheme (PBS) payment systems – meaning that there are strong incentives on the part of patients and providers to report the data. Nevertheless, the data's primary function is to aid the financing of health care, not necessarily research. This implies that the data have their limitations of which researchers should be aware. The main strengths and limitations are outlined in this factsheet and should be understood before deciding whether or not to apply for access to the data.

The Medicare Australia data discussed in this factsheet are closely connected to two Commonwealth Government health programs: Medicare and the PBS. Medicare Australia also holds other data associated with programs such as the Australian Childhood Immunisation Register, the Herceptin Program and the Australian Organ Donor Registry. The focus of this factsheet however is on data that relate specifically to Medicare and the PBS. Accordingly, this factsheet will discuss the data relating to the Medicare program in section 2 and then turn to the data relating to the PBS program in Section 3. Section 4 of this factsheet will discuss how Medicare Australia data could complement and add value to trial or observational study data. Using case studies, Section 5 will highlight where Medicare Australia data have been used successfully. The final section provides a guide on how researchers can access the data.

It should be noted that the focus of this factsheet is on accessing individual level data held by Medicare Australia. Readers should be aware that Medicare Australia and the Department of Health routinely produce reports and make data available via the internet. These reports use Medicare Australia data reported in aggregate form. Section 6 provides readers with information on the type of aggregate data and how these aggregate data can be accessed.

2. Data relating to Medicare claims

This section will first provide a brief background to the Medicare program. The reason for doing so is to provide a better understanding of the scope of the data that Medicare Australia collect. In essence, the administrative data are accurate as long as the Medicare program has financing responsibility for the health care service

[11] Formerly known as the Health Insurance Commission, or HIC

provided; Medicare does not hold data for which it has no funding responsibility.

This section will explain what is in the Medicare claims data, their scope and the variables that are typically available for research. This section also considers the strengths and weaknesses of Medicare data and sets out some practical issues that researchers need to be aware of in analysing the data.

2.1 Background to Medicare Program

Medicare is a Commonwealth Government funded program that covers a wide range of health care services. It covers services that are usually privately provided; providers are paid by patients on a fee-for-service basis and patients are reimbursed by the government. The Medicare program defines more than 5700 different medical services. The government assigns each service a Medicare Benefits Schedule (MBS) item number and MBS Fee. The list of items can be found in the MBS at www.health.gov.au/mbsonline. This publication describes the type of service for each item alongside the MBS Fee for that item. This publication is regularly updated to reflect changes in the MBS Fee as well as changes to item descriptions and new items.

Medicare covers services that are provided out-of-hospital (e.g. in doctor's consulting rooms) as well as in-hospital services provided to private patients whether they are treated in a private or public hospital. Importantly, it excludes services provided to public inpatients. That is, Medicare Australia does not hold information on services provided to public inpatients. The states and territories are the custodians of public hospital data, and a number of jurisdictions have set in place processes to provide researchers access to these data. This topic will be explored further in a future CREST factsheet.

2.1.1 Medicare arrangements for out-of-hospital services

Under the Medicare program, the public subsidy (referred to from here on as the 'Medicare benefit') for each item is directly related to the MBS Fee. The Medicare benefit for out-of-hospital services is usually 85% of the MBS fee, with two exceptions:

- Since January 2005, patients have received a Medicare benefit worth 100% of the MBS fee for all GP and other non-referred attendance items for out-of-hospital services.
- There is a cap on the maximum amount between the 85% and 100% of the MBS Fee for out-of-hospital services. As at November 2010, this maximum cap was equal to $71.20. This in effect means that, for items with an MBS fee above $474.65, the Medicare benefit is calculated as the MBS Fee minus $71.20 (which generally provides the higher benefit).

Providers are not bound by the MBS fees[2]. Each provider can set fees at his or her discretion. Importantly, Australians cannot purchase additional insurance for Medicare

[2] Other than optometrists, who, as part of their arrangement, undertake to charge no more than the MBS fee.

eligible services that are provided in the out-of-hospital setting. This means that the Government is the sole insurer of Medicare eligible out-of-hospital services. When providers charge fees that are above the Medicare benefit, patients pay the gap out of their own pocket.

There is some ambiguity in the financing system as to what constitutes an out-of-hospital service. In the case of GP or specialist attendances in a consulting room it is clear cut and these types of services would be regarded as occurring out-of-hospital. Where it is less clear, is in outpatient clinics that are often located within a public hospital. Such clinics often deal with patients who are community based (i.e. not admitted) or who have just been discharged from hospital. There is considerable variation in how the services provided to these patients are financed (and importantly whether or not a service is financed through Medicare). There is variation across states, hospitals, medical specialty and private or public provisions. For example, most chemotherapy services in NSW are provided in an out-of-hospital setting in clinics that are attached to a public hospital. In most instances, the hospital/provider bills Medicare for these services. In Victoria, however, chemotherapy is provided in a similar fashion but public patients are typically classified as inpatients – and therefore are not billed to Medicare.

The importance of this discussion is that Medicare data are linked to payments. If there is no payment claim, then there are no data. Continuing on with our example on chemotherapy, the number of Medicare claims in 2010 was 3284 per 100,000 head of population in Queensland but only 2032 per 100,000 head of population in Victoria. In part, this variation is driven by differences in billing practice (rather than actual differences in chemotherapy administration).

The Extended Medicare Safety Net

The Extended Medicare Safety Net (EMSN) was introduced in 2004 to provide additional Medicare benefits for those families who had incurred a high level of out-of-pocket (OOP) costs during a calendar year. The EMSN only covers services that are eligible for Medicare benefits and are provided out of hospital. It does not cover services provided to inpatients. The EMSN takes effect once a family or single person has reached a certain threshold in OOP costs. Once the threshold is reached, the EMSN pays 80% of the OOP costs for Medicare-related services for the rest of the calendar year. As at 1 January 2015 the threshold for families who held a concession card or were recipients of Family tax Benefit Part A was $638.40 and $2,000 for everyone else. This means that once a patient has incurred the threshold amount in OOP costs, the EMSN will cover 80% of a further OOP costs incurred through Medicare out-of-hospital services for the remainder of the calendar year.

In 2010, the Government introduced EMSN caps for a small number of MBS items relating to private obstetrics, assisted reproductive services, cataract surgery, varicose veins treatment and hair transplant. These caps restrict the benefit the patient can claim up to a maximum amount.

2.1.2 Medicare arrangements for in-hospital services

In the case of services that are delivered in-hospital, the Medicare benefit is equal to 75% of the MBS fee for all eligible services. Here, private health insurers can provide insurance for in-hospital medical services that has historically been equivalent to 25% of the MBS fee—although more recently private health insurers have been allowed to cover more than this when a doctor enters into a gap cover arrangement with a health insurer. In these situations the patient either has no OOP costs or should be informed in advance about any OOP costs.

2.2 Variables available from Medicare claims data

Table 1 describes the types of variables available from Medicare data, along with a description of each.

Variable	Definition
Participant ID	Unique identifier provided by the study to reference the individual participants
Date of Service	The date on which the provider performed the service
Date of Processing	The date on which Medicare Australia processed the payment of a claim for Medicare benefits
Item Description	Describes the service provided by the provider as per Medicare Benefits Schedule (see www.health.gov.au/mbsonline)
Medicare Item Number	A number that identifies the service provided by the provider as per Medicare Benefits Schedule
Provider Charge	The dollar amount the provider charged for the service
Schedule Fee	Fee listed in the Medicare Benefits Schedule
Benefit Paid	This is the Medicare benefit paid to the claimant
Patient Out of Pocket	The dollar amount the patient is out of pocket i.e. Provider charge minus benefit paid
Bill Type	The method by which the Medicare benefit was claimed i.e. cash, bulk bill, cheque to claimant, cheque to provider via claimant, PCe (Easyclaim patient claim), simplified bill and EFT
Scrambled Ordering Provider Number	A unique scrambled provider number identifying the doctor who referred the service
Scrambled Rendering Provider Number	A unique scrambled provider number identifying the doctor who provided the service
Date of Referral	This is the date of referral or request for a service by a provider
Rendering Provider Postcode	Postcode of servicing provider's practice location

Ordering Provider Postcode	Postcode of referring provider's practice location
Hospital Indicator	An indicator of whether the service was performed in hospital
Provider Derived Major Speciality	Speciality of provider
Item Category	The Medicare Benefits Schedule (MBS) comprises a hierarchical structure of Categories, Groups, Subgroups and Items numbers, to group similar professional services together.

The Medicare Benefit comprises the Medicare rebate plus the Safety Net Benefit (if applicable).

Medicare Australia data are available at an individual level (sent in long format). This means that each health care service observation generates a row of data, and thus a single patient will have many rows of data depending on how many claims they made over the observation period.

3. Data relating to the Pharmaceutical Benefits Scheme claims

3.1 Background to the Pharmaceutical Benefits Scheme

The PBS refers to the subsidisation of pharmaceuticals listed on the Schedule of Pharmaceutical Benefits by the Australian Commonwealth Government. The PBS ensures affordable access to necessary and lifesaving drugs and is a key component of Australia's health care system.

The Government is advised by the Pharmaceutical Benefits Advisory Committee (PBAC) regarding which drugs should be listed on the PBS schedule. Members of PBAC include clinicians, pharmacists, epidemiologists, health economists, and a health consumer advocate. PBAC is required to consider the clinical "effectiveness and cost of therapy involving the use of the drug, preparation or class, including by comparing the effectiveness and cost of that therapy with that of alternative therapies, whether or not involving the use of other drugs or preparations". PBAC can recommend that a drug be listed, reject a submission or recommend that the drug be restricted to certain patients by recommending the listing of a drug as an unrestricted benefit, a restricted benefit, or an authority-required benefit item. PBAC can also recommend that a drug be listed as a Section 100 (Highly Specialised Drugs Program) item where it is provided under special arrangements (e.g. by public and private hospitals or other approved specialist facilities). Note that the PBS does not cover drugs dispensed to patients in public hospitals other than drugs listed as Section 100 items – these costs are the responsibility of State and Territory Governments.

The Minister for Health must approve all drugs prior to listing on the PBS schedule and drugs costing over $20 million per annum (in

any of the first 4 years of listing) need to be approved by cabinet.

Finally, once all approvals are given, the drug is listed on the PBS schedule at an agreed dispensed price. Pharmacists agree to dispense these medicines at the dispensed price, with the patient paying a set co-payment and the Government paying the difference. The agreed dispensed price includes allowances for the ex-manufacturer price, a wholesaler margin, a pharmacy mark-up and a dispensing fee.

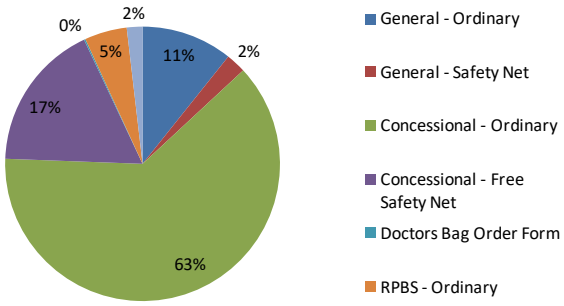
Unlike Medicare, the PBS operates as a 'front-end' deductible insurance program. That is, the patient pays the first component of the product price (patient co-payment), and the PBS subsidises 100% of the remaining costs equal to the difference between the patient co-payment and the price agreed to by the government and the pharmaceutical company supplying the drug[3]. As of the 1 July 2015, patient co-payments were $6.10 for concession card holders and $37.70 for the general population.

The PBS Safety Net provides additional financial support once a family reaches a certain threshold incurred through PBS-related co-payments. If a patient's total expenditure on co-payments reaches the safety nets of $366.00 for concession card holders or $1,453.90 for the general population (1 July 2015), any further drugs dispensed in the calendar year are either free or the co-payment falls to $6.10 per prescription for concession card holders and the general population, respectively.[4] Patients may acquire a safety net card for a fee of $9.47.

In 2010 the vast majority (87%) of all PBS prescriptions were filled by concession card holders or people eligible for the RPBS (see Figure 1).

Both the PBS co-payment and Safety Net arrangements have important implications for the data available from Medicare Australia.

Figure 1: PBS Services, 2010



PBS data from Medicare Australia can be used to help identify the use of drugs not being directly evaluated by a study, for example drugs used to treat adverse events, and the use of drugs after the completion of a study, for example the use of painkillers when a cancer has metastasised.

[3] The PBS also subsidises the cost of the wholesaler margin dispensing fee of the community pharmacist.

[4] Because of other policies in relation to the PBS, there may be situations where a patient who has reached the respective reduced PBS Safety Net co-payment amount is not eligible for PBS Safety Net benefits. In these cases they are required to pay the respective co-payments. For example, this will happen for some selected medicines for chronic conditions where a repeat prescription is dispensed within 21 days of the previous supply.

The use of PBS data can help avoid recall bias as the data capture what, when, and at what dose a drug is prescribed. The use of PBS data can also provide some information on adherence rates through identifying when and how often a patient fills a repeat prescription.

3.2 Variables available from PBS claims data

Variable	Definition
Participant ID	Unique identifier provided by the study to reference the individual participants
Date of Supply	This is the date on which the PBS item was supplied
Date of Prescribing	This is the date on which the prescription was written
PBS Item Code	Number which indicates item prescribed as per Schedule of Pharmaceutical Benefits
Item Description	The description of the item name as it appears in the Schedule of Pharmaceutical Benefits (also see www.pbs.gov.au)
Patient Category	The patient category refers to the patient's concessional status at the time of supply of the benefit of the item
Patient Contribution	The patient contribution actually paid by the patient
Net Benefit	Benefit that Medicare Australia paid to the Pharmacy
Scrambled Prescriber	A unique scrambled prescriber number identifying the doctor
Number	who prescribed the PBS item
Pharmacy Postcode	Postcode of Pharmacy where the prescription was dispensed
Form Category	Description of script type. Ie: OR: Original, RE: Repeat, DS: Deferred Script, AU: Authority, AR: Authority Repeat
ATC Code	The code allocated by the WHO Collaborating Centre for Drug Statistics Methodology (www.whocc.no/atcddd/)
ATC Name	In the Anatomical Therapeutic Chemical (ATC) classification system, the drugs are divided into different groups according to the organ or system on which they act and their chemical, pharmacological and therapeutic properties
Prescriber Derived Major Speciality	Speciality of prescribing doctor

4. Strengths and Weaknesses of Medicare Australia data

4.1 Strengths and weaknesses common to both Medicare and PBS claims data

The primary strength of both Medicare and PBS data is their accuracy. The incentive to provide these data is strong on the part of patients and providers; payments are dependent on it. In many cases the data are

collected in real-time and automated with little chance for errors. For example, data entry for doctors who bulk-bill is automatically entered into the Medicare Australia systems. Similarly, pharmacists' PBS claims are entered automatically. Furthermore, Medicare Australia has numerous processes in place to check and verify the data. While it is by no means fool-proof, as the system is reliant on claims being made, it has been shown to be more reliable than alternative self-reporting methods, and is possibly a more efficient system of collecting data.

A further strength is the longitudinal nature of Medicare Australia data. With the right type of patient consent in place (more on this in Section 6), Medicare Australia can provide researchers with retrospective data going back up to five years from the point of data extraction. It should be noted that Medicare Australia holds data for a maximum of five years. Every day, a day's worth of claims data is deleted from the Medicare Australia files. The deleted day correspond to claims that occurred exactly five years ago. This has important implications for researchers in terms of when they want to extract data. To maximise the retrospective observation period, researchers may want to extract data at several points in time with one of those dates occurring at the earliest possible time.

With appropriate patient consent in place, the observation period can extend to the life of the study (e.g. coinciding with the time of the trial) and beyond. This facility may provide a cost-effective way of following-up patients beyond the study's end points and may also provide a supplementary means of minimising loss to follow-up.

The data are also strong in terms of providing accurate information on costs. They provide accurate information on the amount of benefits provided by government. In terms of the Australian health care system, Australian Government benefits account for the majority of expenditure in community based prescription drugs and Medicare related services. It also provides data on the out-of-pocket costs associated with these products and services, although there are some important caveats here that researchers need to be aware of and which are discussed in Sections 4.2 and 4.3.

The Medicare Australia data are also strong in terms of measuring access to health care services and drugs. They can provide an accurate picture of the type of services patients are using, including the types of monitoring services (e.g. pathology, diagnostic imaging) they are undertaking as well as their compliance with medication regimes. Once again, there are some important restrictions on this which will be discussed in sections 4.2 and 4.3.

It should be noted that there are delays in the recording of claims data. In some cases, the recording of claims occurs very soon after a service has been rendered. For example, bulk-billed services are frequently processed electronically, with direct communication to the Medicare Australia database. In other instances, there may be a significant gap between the service date and the claim date, for example, where a patient pays for the

service in the first instance and seeks reimbursement at a Medicare office. In this case, the service will be recorded by Medicare Australia once the patient makes the claim. Most claims are made within a few months of the service but some people delay their claim. The Department of Health estimates that it takes approximately 6 months after the end of the calendar year for 99 per cent of claims in the previous calendar year to be submitted to Medicare Australia.

Where Medicare Australia data are weak is in terms of clinical outcomes. For example, whilst the data can inform research on whether or not a particular test took place, the outcome of that test can generally not be determined. Nevertheless, it is sometimes feasible by examining the patterns of care in the data to proxy certain outcomes. This would require careful consideration of how a clinical pathway can be aligned to MBS and/or PBS items. In a similar fashion it may be feasible to ascertain certain co-morbidities from the type of procedures and drugs that patients are using (or have stopped using).

Finally, one of the major weaknesses in using Medicare Australia data is the fact that not all patients will consent to the linkage of such data. From previous studies, there is considerable variation in the percentage of study participants who will consent to Medicare Australia data linkage.

4.2 Specific issues relating to Medicare claims data

Care should be exercised in interpreting changes in the utilisation of Medicare services over time. They may reflect structural changes to the Medicare Benefits Schedule (MBS), such as additions of new items to the MBS and changes to the coverage of Medicare as a result of Government policy. Some of the main changes are listed in Appendix B.

Care should be exercised in interpreting data when aggregated in units of time. Medicare data are subject to seasonal variation due to holidays as well as increased demand for health care over the winter season.

In 2004 a number of bulk-billing incentives were introduced. These items are billed by providers (Items 64990 and 64991 for diagnostic imaging, Items 74990 and 74991 for pathology and Items 10990, 10991 and 10992 for the rest of the MBS) in addition to the normal routine charge. This implies that there may be two claims for the one service and requires researchers to be aware of the risk of double-counting.

It should be noted that Medicare Australia does not hold information on the rebates received by patients from private health insurance funds. This implies that for private inpatients, Medicare Australia data can be used to identify the type and number of services, the provider fee charged and the government benefit paid, but it cannot identify the patient OOP cost. OOP costs are able to be identified for services provided in an out-of-hospital setting as such services are not covered by private health funds.

Pathology items are subject to an arrangement called ‘episode cone’. This

occurs when a referring GP orders more than three pathology items for a non-admitted patient. The pathology provider can only claim benefits for the three items with the highest Schedule fees. This means that the Medicare Australia data may be censored when more than three pathology tests were performed in a single episode.

4.3 Specific issues relating to PBS claims data

The PBS data are based on payments to pharmacists. There is no guarantee the patient took the drug.

PBS data do not capture private prescriptions (i.e. for drugs not listed on the PBS or where the patient does not meet the restriction criteria), over the counter drugs (e.g. painkillers, vitamins etc), or drugs dispensed in public hospitals (other than Section 100 drugs). Information on drugs that cost less than the PBS co-payment is available in the Medicare Data, but only for items dispensed from 2012 onwards. In 2008-09 the PBS covered 20.1% of total expenditure on pharmaceuticals in Australia, up from 18.7% in 1998-99 (Australian Institute of Health and Welfare 2010). The remaining expenditure on pharmaceuticals includes those that cost less than the co-payment (17.4%), private prescriptions for non-PBS-listed drugs (9.1%), over-the-counter drugs such as painkillers, vitamins etc (67%) and other (6.6%).

Authorisation codes (which apply to drugs listed as authority required benefit items) directly link a drug to the treatment of a specific disease/condition for which it is listed. However, if the drug has no authorisation code, there is no guarantee that the drug was taken to treat the condition of interest compared to a non-relevant condition (i.e. painkillers for a sprained ankle). Furthermore, while there may be a general restriction in place (i.e. not authority-required), there is no guarantee that the clinician has followed this restriction.

Some drugs may fall between the co-payment for concession card holders and general patients. Thus the PBS would capture usage by concession card holders but not for the general population (for use prior to 2012), and so there would appear to be no use of these drugs by the general population until they reached the safety net. Be aware that co-payments and safety net levels vary over time (Department of Health and Ageing 2010) and progressively more drugs fall below the safety net. Due to the safety net arrangements falling over calendar years, PBS data also has a seasonal aspect to it with high levels of prescriptions being filled in the last few months of the year.

The following equation is useful to calculate the cost to the patient and thus identify whether they are a concession card holder:

Cost to the patient = (Price of drug on PBS – Benefit Paid) / Number of scripts filled

Brand premiums or therapeutic premiums may also be paid by patients for branded versions of drugs where a generic is available.

The Chemotherapy Pharmaceuticals Access Program (CPAP) for public hospitals was introduced in April 2008 (Department of Health and Ageing 2008). Under this program

patients do not have to pay the co-payment if they receive a Section 100 drug as an inpatient from the hospital pharmacy, while a non-admitted (out-patient) patient will have to pay a co-payment.

Some drugs have in place a risk sharing scheme where the Government is reimbursed by the manufacturer if total expenditure reaches a set amount. Consequently the benefit paid may not represent the actual cost to the Government.

When collapsing data into units of time, be careful to distinguish between when the drug was prescribed and when the prescription was filled.

5. Examples of how Medicare Australia data has been used in previous studies

Medicare and PBS data have been used in a range of different study types and for different purposes. Although most of the studies reported to date are observational studies, MBS/PBS data are also potentially useful sources of resource use and cost information for intervention studies including economic evaluation. The following are some examples of published studies using Medicare and/or PBS data covering a range of research topics and approaches. The types of data accessed for the studies cover the linkage of individual survey data to Medicare and PBS data, the linkage of two or more existing population datasets and the use of unlinked de-identified data.

5.1 Linked individual survey and administrative data

Cost of illness - Rowell et al (2011) used Medicare and PBS data to supplement data collected from hospital records and patient surveys to estimate the costs of major trauma. They found costs to be higher than previously reported, with readmissions having a major impact on cost.

Rowell D., Connelly L., Webber J., Tippett V., Thiele D., Schuetz M. What are the true costs of major trauma? Journal of Trauma - Injury, Infection and Critical Care 2011; 70(5): 1086-1095.

Patterns of medication and health service use and cost - The Australian Longitudinal Study on Women's Health (Byles et al 2008) used Medicare and PBS data linked to longitudinal survey data to describe patterns and costs of medication use over time and for women with different socio-demographic characteristics. They also examined patterns of medication and health service use for women with different chronic conditions. This report draws on many published papers from ALSWH.

Byles J, Loxton D, Berecki J, et al. Use and costs of medications and other health care resources: Findings from the Australian Longitudinal Study on Women's Health. Report prepared for the Australian Government Department of Health and Ageing, June 2008. http://www.alswh.org.au/Reports/OtherReportsPDF/MajorReportC.pdf

Factors associated with the use of GP services - The Australian Longitudinal Study on Women's Health (Young et al 2001) used

linked Medicare and survey data to investigate factors associated with the use of GP services. They found that, while health status predicted GP visits, OOP cost per consultation was also inversely associated with the use of GP services (after adjusting for health).

Young AF, Dobson AJ & Byles JE. Determinants of general practitioner use among women in Australia. Social Science and Medicine, 2001; 53(12): 1641-1651.

5.2 Linked population datasets

Birth defects and prescription of teratogens - Colvin et al (2010) investigated associations between birth defects and prescription of known or suspected teratogens during pregnancy. They linked data from the Western Australian birth records, the birth defects registry and PBS claims data. They identified many known associations between medicines and birth defects.

Colvin L., Slack-Smith L., Stanley F.J., Bower C. Linking a pharmaceutical claims database with a birth defects registry to investigate birth defect rates of suspected teratogens. Pharmacoepidemiology and Drug Safety 2010; 19(11): 1137-1150.

5.3 De-identified population data

Time trends in breast cancer incidence and HRT prescription - Canfell et al (2008) examined trends in age-standardised breast cancer incidence in women over 50 between 1996 and 2003 and, using PBS data, analysed trends in HRT prescription rates over the same period. They found that both HRT prescription and breast cancer incidence increased until 2001 and declined significantly between 2001 and 2003. Breast cancer incidence rates in women under 50 were stable over the same period.

Canfell K., Banks E., Moa A.M., Beral V. Decrease in breast cancer incidence following a rapid fall in use of hormone replacement therapy in Australia. Medical Journal of Australia 2008; 188(11): 641-644.

6. How can I access Medicare Australia data?

There a two ways of using Medicare data in a research study:

1) Collecting the individual utilisation and cost data on the individuals participating in your study with their consent, or

2) Using summary statistics related to a specific item or items which can be downloaded from the Medicare Australia Website or requested specifically from Medicare Australia if the online reports do not include the relevant information breakdown.

Accessing individual data on your study participants

Access to MBS/PBS data on consenting participants involves an application to Medicare Australia for approval for your study and then a request for the data at the appropriate time. The following provides some brief information about steps in the process:

- Contact Medicare Australia by sending an email to: statistics@humanservices.gov.au

with a brief explanation of your study requirements. They will respond with information about the steps to follow and copies of the data request and relevant study consent form. This early contact is important so that you receive the most up-to-date information about the process.

- Your study will need at least two consent forms as the Medicare consent form is in addition to the study consent form.
- Obtain ethics approval for your study before submitting your application for approval to Medicare Australia.
- Complete the consented study form provided by Medicare Australia and submit along with a copy of the ethics approval, consent form and any other necessary documentation.
- Following approval of your study by Medicare Australia, you will be provided with an indicative cost for data acquisition which must be accepted prior to proceeding.
- To request data extraction, you provide a data file as specified by Medicare Australia. This will include each participant's study number, Medicare number and other identifying information for matching. The completed consent forms will be submitted to Medicare Australia with this request.
- The data will be provided to you with individuals identified by study number only (other identifying information will be deleted).

Accessing summary statistics

A number of summary statistics are freely available on the Medicare Australia website. Researchers can create reports based on particular MBS or PBS items/groups and obtain information about the number of services and benefits paid for those items. Furthermore, the website allows researchers to also obtain this information on the basis of gender and age group. Researchers have a choice in defining the unit of time (e.g. monthly, calendar year or financial year) by which the data is aggregated. Note that the website does not provide data on fees or out-of-pocket and does not distinguish between inpatient and out-of-hospital settings. The data are available for each state and territory. MBS/PBS summary statistics can be found on the Medicare Australia website at:

http://medicarestatistics.humanservices.gov.au/statistics/mbs_item.jsp

---

For more information

For more information on any part of this factsheet, please contact:

crest@uts.edu.au

References

Australian Institute of Health and Welfare (2010). Health Expenditure Australia 2008–09, Health and Welfare Expenditure Series No. 42. Cat. No. Hwe 51. Canberra, AIHW.

Department of Health and Ageing (2008). Schedule of Pharmaceutical Benefits for Approved Pharmacists and Medical Practitioners, Chemotherapy Pharmaceuticals Access Program Supplement, Effective 1 April 2008. Canberra, Department of Health and Ageing.

Department of Health and Ageing (2010). History of Pbs Copayments and Safety Net Thresholds. Department of Health and Ageing,. Accessed 13 May, 2011.

http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pbs-general-pbs-copayment.htm

Appendix A: Further information

Information about the Medicare Benefits Schedule – http://www.health.gov.au/mbsonline

Information about the Pharmaceutical Benefits Schedule – http://www.pbs.gov.au

Quarterly reports on Medicare data published by the Department of Health and Ageing – http://www.health.gov.au/internet/main/publishing.nsf/Content/Medicare+Statistics-1

Annual reports on PBS data published by the Department of Health and Ageing - http://www.health.gov.au/internet/main/publishing.nsf/Content/Pharmaceutical+Benefits+Scheme+%28PBS%29-3

Aggregate Medicare item reports available at - http://medicarestatistics.humanservices.gov.au/statistics/mbs_item.jsp

Aggregate PBS item reports available at –

http://www.humanservices.gov.au/corporate/statistical-information-and-data/pharmaceutical-benefits-schedule-statistics/?utm_id=9

Appendix B: Some changes to the MBS from 2005-2010

Set out below are details of some significant changes to the MBS since the beginning of 2005, which might assist with interpretation of changes in Medicare utilisation.

2005 – 1 January - 100% Medicare for non-hospital GP attendance items. Out of hours loading restored to MBS items (this had been removed in 1987).

2006 – 1 January - Extended Medicare Safety Net thresholds increased. 1 November - new psychology items introduced into the MBS.

2007 – Some out of hospital services could attract a supplementary benefit from health funds. From 1 May 2007, public sector Approved Pathology Authorities able to claim pathology patient episode initiation items. From 1 November 2007, chronic disease dental items introduced into the MBS.

2008 – 1 July – new autism items introduced into the MBS. 1 July – Dental Benefits Schedule covering teen dental checks introduced, but not part of Medicare.

2009 – 1 November – high volume joint injection items (50124 & 50125) removed from the MBS. 1 November – Schedule fees for cataract surgery were reduced following a 2009-10 Budget measure. Schedule fees for cataract items changed three times between 1 November 2009 and February 2010. 1 November – the Schedule fees for coronary angiography Items 38215-38240 and Item 38246 were reduced by 20 per cent.

2010 – 1 January – capping of EMSN benefits introduced (see www.health.gov.au/emsnreview). 1 January – two specialist attendance items 16401 and 16404, previously claimed under items 104 and 105, now included in the obstetrics broad type of service group. Item 16590 was split into two items – Item 16590 planning and management where the practitioner intends to deliver the baby for a privately admitted patient and Item 16591, planning and management where the patient will be transferred to another practitioner for delivery. 1 January – restructure of the Assisted Reproductive Technology (ART) part of the MBS (Group T1, subgroup 3), resulted in new item numbers, broadening the scope of some services and reducing others. 1 November – new items for services provided by eligible midwives were introduced with EMSN benefit caps.