The Auditor-General
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Performance Audit

Accuracy of Medicare Claims Processing

Medicare Australia

Australian National Audit Office

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Australian National Audit Office

Canberra ACT
23 January 2008

Dear Mr President
Dear Mr Speaker

The Australian National Audit Office has undertaken a performance audit in Medicare Australia in accordance with the authority contained in the *Auditor-General Act 1997*. Pursuant to Senate Standing Order 166 relating to the presentation of documents when the Senate is not sitting, I present the report of this audit and the accompanying brochure. The report is titled *Accuracy of Medicare Claims Processing.*

Following its presentation and receipt, the report will be placed on the Australian National Audit Office's Homepage—http://www.anao.gov.au.

Yours sincerely

Ian McPhee
Auditor-General

The Honourable the President of the Senate
The Honourable the Speaker of the House of Representatives
Parliament House
Canberra ACT

AUDITING FOR AUSTRALIA

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For further information contact:
The Publications Manager
Australian National Audit Office
GPO Box 707
Canberra ACT 2601

Telephone: **(02) 6203 7505**
Fax: **(02) 6203 7519**
Email: **webmaster@anao.gov.au**

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Audit Team

Greg Mazzone
Corrine Horton
Fran Holbert
Nathan Williamson

Contents

Abbreviations

CAAT	Computer Aided Audit Technique
CD	Consumer Directory Maintenance System
CDQI	Continuous Data Quality and Improvement
CEO	Chief Executive Officer
CMC	Corporate Management Committee
CSSC	Customer Service Sub Committee
DHS	Department of Human Services
DoHA	Department of Health and Ageing
EFT	Electronic Funds Transfer
EFTPOS	Electronic Funds Transfer at the Point of Sale
IFF	Item Fee File
IS	Information System
IT	Information Technology
LDA	Latter Day Adjustment of Medicare claims
MA	Medicare Australia
MBCC	Medicare Benefits Consultative Committee
MBS	Medicare Benefits Schedule
MAGPD	Medicare and Associate Government Programs Division
MCHF	Medicare Claims History File

MDV	Medicare Data Validation process
Medicare	The Medicare programme
MSAC	Medical Services Advisory Committee
NCDQI	National Continuous Data Quality Improvement
OCR	Optical Character Recognition
PPSD	Medicare Australia's Public/Provider Services Division
QCS	Quality Control System
SO	Service Officer

Glossary

Audit trail	An audit trail is a record of details that can be relied upon to reconstruct the nature and extent of a prior activity.
Bulk bill	Bulk bill is a type of Medicare benefits claim that involves the doctor billing Medicare Australia directly and accepting the Medicare benefits as full payment for a service.
Claim channel	A method used by a Medicare claimant to submit a Medicare claim.
Consumer Directory (CD)	The Consumer Directory is Medicare Australia's record of valid patients that is used during the processing of Medicare claims. Also known as the Consumer Directory Maintenance System.
Consumer Information Control System (CICS)	CICS is an interface that is used to enter information into applications running on a mainframe computer.
Database schema	A database schema is a method to create logical groupings of data within a database.
Easyclaim	Medicare Easyclaim enables bulk billed and claimant claimed services to be lodged electronically with Medicare using an EFTPOS device located within participating doctors' surgeries. Where the claimant has paid the full cost of the relevant service(s) the Medicare benefit is paid almost immediately into the claimant's bank account. For bulk billed services the Medicare rebate is paid to the practitioner the next working day.
Item(s)	The Medicare programme provides health insurance for a number of health services that are defined in the Medicare Benefits Schedule. These services are referred to as Medicare Benefits Schedule Items, or Items.

Latter Day Adjustment (LDA)	An adjustment to the Medicare Claims History File to correct an error in the processed claim. This occurs after a review of the processed claim.
Legacy application	A legacy application is a pre-existing IT application in which a company or organisation has already invested considerable time and/or money. Common examples of legacy applications include database management systems running on mainframe computers.
Location Specific Practice Number (LSPN)	The Health Insurance Amendment (Diagnostic Imaging, Radiation Oncology and Other Measures) Act 2003 requires sites that provide diagnostic imaging or radiation oncology services to be registered with Medicare Australia for Medicare benefits to be payable. Registered sites and bases for mobile equipment are allocated a Location Specific Practice Number (LSPN). The LSPN is a unique identifier that is required to be submitted as part of each Medicare claim for diagnostic imaging or radiation oncology services.
Medicare Online Claiming	Medicare Australia's online claiming channel. It was introduced in 2002 to enable medical providers to lodge claims, including Medicare bulk bill, private claimant and DVA claims over the Internet, and to submit information to the Australian Childhood Immunisation Register.
Medicare Safety Net	The Medicare Safety Net is an initiative designed to reduce the out-of-pocket medical expenses incurred by a claimant in a year. The cost of medical expenses incurred in a year is monitored, and if an annual Safety Net threshold for an individual or family has been reached the benefit payable is increased.
Quality Assurance	Quality Assurance includes all the checks and balances (from source to reporting) to make sure the risks to Medicare Australia are minimised and that there is confidence in the final product.

Quality Control	A Quality Control allows for the (timely) detection of variations from the required business rules, allowing for appropriate corrective action as required.
Simplified billing	An arrangement between health insurance providers, Approved Billing Agents and Medicare Australia that allows for claims for in-hospital services provided to private patients to be submitted to Medicare by health insurance providers or Approved Billing Agents.
SO assessing intervention	The action taken by an operator in response to error or warning messages when assessing/processing claims. This is in recognition that not all claims can be assessed solely through the application of system based business rules, and may require that a patient's specific circumstances be considered.

Source: ANAO analysis and Medicare Australia documents.

Summary and Recommendations

Summary

Introduction

1. The Medicare programme ('Medicare') was introduced in 1984 to provide affordable and accessible health care to eligible Australian residents. It provides access to medical and hospital services for all Australian residents and certain categories of visitors to Australia.

2. Medicare Australia (MA), which is part of the Human Services Portfolio[1], is the agency responsible for administering the delivery of Medicare[2]. In 2006–07, there were 21.1 million people enrolled in Medicare and a total of $11.8 billion in Medicare benefits were paid with the processing of claims relating to 257.9 million Medicare services[3]. This number of services and customers makes the Medicare claims processing system one of the highest volume transaction systems in Australia.

Processing of claims

3. To facilitate ready access to Medicare, MA has expanded over time the range of claiming and payment methods (or channels) that are available to both patients and service providers. To achieve this, MA has been a relatively early adopter of emerging technologies and, as a result, the agency has a dynamic Information Technology (IT) environment. The introduction of new systems to support additional claiming and payment methods has often required the retrofitting of, and/or integration with, the existing older systems.

4. Notwithstanding that the number of systems has expanded to accommodate new claim submission and payment methods, the actual assessment of a claim, irrespective of how the claim was submitted or how the payment is to be made, is undertaken using a common mainframe based

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1 Before 1 October 2005, MA operated as the Health Insurance Commission under the *Health Insurance Commission Act 1973* (HIC Act). On that date, the *Human Services Amendment Act 2005* commenced and the HIC Act became the *Medicare Australia Act 1973*.

2 In addition, the agency is responsible for the administration of the Pharmaceutical Benefits Scheme, the Australian Organ Donor Register and as part of the virtual agency, the Family Assistance Office, delivers Family Assistance programmes. Across the various programmes that MA administers, the agency processes more than 500 million transactions each year and is responsible for providing over $30 billion in benefits to the Australian public and to health care providers. *Medicare Australia Annual Report 2006–07*, p. 11.

3 ibid, p. 25. The number of persons enrolled in Medicare includes non-residents (long-term visitors – more than 6 months – and eligible short-term visitors).

processing system. The design of this processing system, and of the underlying Medicare Claims History File (MCHF) records that it produces, has remained relatively unchanged since its inception.

Audit objective and scope

5. The objective of the audit was to examine the accuracy of Medicare claims processing, including the adequacy and operation of relevant manual and system processes. The audit assessed the:

- adequacy and operation of relevant manual and system controls used to support the reliable processing of Medicare claims, and
- accuracy of the assessing and processing of Medicare claims, using Computer Aided Audit Techniques (CAATs).

6. The design of the IT systems comprising the Medicare processing system was analysed to determine if it promoted accurate assessment and processing of Medicare claims. CAATs were used to assess the accuracy of a sample of the Medicare claims processed in a two week period, involving some 6.5 million claimed Items[4].

7. The focus was on the mainframe based common assessing processing system, and the supporting processes, that are used to assess all Medicare claims irrespective of what method was used to submit or pay the claim. The validity of the Medicare Consumer Database, which is used to determine whether a patient is a 'valid Medicare' patient, was not tested by this audit.

Overall conclusion

8. The overall accuracy of Medicare claims processing was demonstrated by the results of the ANAO's testing of a sample of claims. The ANAO's sample was drawn from Medicare claims submitted and processed in a two

[4] The Medicare programme provides health insurance that covers the delivery of certain health services. These services are referred to as Medicare Benefit Schedule (MBS) Items, or Items. For Medicare benefits to be payable, the professional services and the fees for the service must be included in the MBS, which requires them to be provided for under Part II of the *Health Insurance Act 1973* (as amended)(the Act) and listed in supporting Regulations. The Act provides that Medicare benefits are payable for medical expenses incurred in respect of professional services. The MBS is updated each November to include changes flowing from the changes to the relevant regulations. The majority of changes in the November update are to allow for the annual adjustment of the fees payable for the professional services.

week period in late 2006[5] and consisted of some 3.7 million claims, which covered 6.5 million Items. The testing found all claims in the sample to be for valid patients and for valid Medicare Items. The schedule fee identified by MA's system as payable for each Item claimed, with one exception[6], was also found to be correct[7], both before and after the annual change to fees that occurred on 1 November 2006.

9. The majority[8] of Medicare claims are assessed automatically using system based business rules, with less than two per cent of claims processed with manual intervention by SOs[9]. The ANAO found that the relevant system controls are generally adequate to support reliable processing of Medicare claims. Manual intervention is required for claims where the patient's particular circumstances mean that it is either difficult or not possible to code system based rules that can by themselves assess the claim. SOs are supported by system controls and guidance material[10] to mitigate the risk that they will make an incorrect assessment or other error. However, there is a need to improve the controls relating to the configuration of business rules so as to

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5 The ANAO's sample was drawn from claims processed in a two week period in October/November 2006, which spanned the annual update of the MBS which occurs on 1 November each year. These claims were for services that were delivered by service providers and processed by MA within the two week period selected. Claims processed by MA during that two week period but which related to services delivered outside the period were not included. In addition some classes of claims were also not included. These were claims which had been adjusted after processing (Latter Day Adjusted), rejected claims, and where claims spanned more than one claim record (required where more than 12 Items are claimed together).

6 The error was due to an Item fee in Medicare Australia's Item database not being updated in the 1 November 2006 annual fee update process, and not as a result of a processing logic error (discussed in paragraphs 2.20 to 2.22).

7 The benefit paid to a claimant for a particular Item does not necessarily match the schedule fee. This occurs for a number of reasons including: whether the service is provided by a GP; whether or not the service is provided to a patient in hospital; the concession status of the patient; and whether or not the patient has reached the relevant Medicare Safety Net Threshold. The interaction of the various rules affecting the benefit amount payable can be complex in some cases. In addition, a benefit payable can vary due to the nature of other items claimed at the same time or within a given period. See paragraphs 4.11 to 4.16 for further information. As a result, the testing of the actual benefits payable for a single Item could require the analysis of a patient's prior Medicare transactions for a much greater period, even years. This was impractical in the context of this audit. During the processing of a Medicare claim the actual benefit payable and the nominal MBS Item benefit amount used as the basis for the benefit payable calculation is recorded. It was this nominal MBS Item amount that was tested by this audit.

8 Some 98.7 percent of claims processed in the two week sample tested by this audit were automatically assessed without any assessing intervention by a MA Service Officer (SO).

9 Manual processing can include the manual entry of a claim by a SO and/or manual assessing intervention by a SO that can be required even for claims entered using systems. System entry of claims includes claims originating from electronic sources and bulk bill vouchers scanned using automatic IT based systems.

10 For example, assessing rulings. Assessing rulings are sections of text associated with some business rules that can be referred to by SOs to provide guidance about how and when to override the specific business rule and pay the claim. See paragraphs 16 to 17.

ensure that the system does not allow for the manual override of any business rules which are legislatively based.

10. MA has established a number of activities that aim, over time, to ensure, monitor, maintain, and improve the quality of processing of Medicare claims. These quality activities are of particular importance where manual processing of a claim is involved. While these quality processes are generally effective, there are opportunities for MA to improve the robustness and, possibly, the efficiency of these quality processes.

11. Given the scale of transactions processed by MA it is critical that the underlying systems process transactions accurately and in a timely manner. The results of audit testing of claims[11] processed over a two week period indicate that the MA information technology systems and complementary support and quality activities achieve this end.

Key findings by Chapter

System Assessed Claims – Chapter 2

12. All but a very small proportion of Medicare claims are assessed automatically by the Medicare processing system and require no manual assessing intervention by a SO. This is the case whether the claims are submitted electronically, scanned into the system using Optical Character Recognition (OCR) technology, or are manually keyed into the system by a SO. In the audit test sample, 98.92 per cent of claims that were submitted either electronically or scanned into the system, were processed automatically and without any manual SO assessing intervention[12].

13. The processing of Medicare claims by the Medicare processing system relies on a set of system based business rules that are defined in a Medicare database known as the Item Fee File (IFF). The business rules contained in the IFF extend beyond the Medicare rules that are explicitly defined by legislation.[13] The IFF also contains a number of guidance rules added by MA to cover policy and operational requirements. The explicitly defined legislative

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[11] For specific details of the scope of the sample and nature of tests performed see footnotes 5 and 7 respectively.

[12] Not all claims can be assessed solely through the application of system based business rules, and may require that a patient's specific circumstances be considered through manual assessing intervention by a MA SO.

[13] The principal legislation for the Medicare programme is the *Health Insurance Act 1973*, which is supported by a number of Regulations that are updated annually to implement benefit increases.

rules can generally be easily applied by the system, whereas the guidance rules often require manual assessment of the patient's circumstances. For each Item in the IFF a number of settings defines whether a business rule associated with the Item can be solely system applied or must also be considered manually.

14. Changes to the Medicare programme often result in a need to change the system applied business rules that are stored in the IFF. The use of controlled processes to only allow authorised and appropriate changes to be made is therefore essential to ensuring the ongoing reliability of the system applied business rules. The ANAO reviewed the processes used to make changes, and a sample of changes that had been made, and found that the processes were adequately designed to ensure only authorised changes were made, and this was supported by the sample of changes tested.

15. Where a business rule relating to an Item is configured as 'guidance only' the system allows for a rule to be overridden manually. ANAO's review of the IFF database identified instances where the configuration of some business rules indicated that they were 'guidance only' when, in fact, the rule was based on an explicit legislative requirement applying to the relevant Item. In the sample of claims tested by this audit, there were 42 instances where claims were made for Items where an associated business rule was incorrectly defined as 'guidance only'. A review of each of these claims showed that the claim was valid and no instances were found where the incorrectly categorised rule had been manually overridden. However, the incorrect configuration of business rules that are legislative requirements as 'guidance only' increases the risk that claims may be incorrectly processed by SOs. The correct configuration of the relevant business rules is a control that could prevent this.

16. In addition to business rules the IFF also contains assessing rulings. Assessing rulings are sections of text associated with some business rules that can be referred to by SOs to provide guidance about how and when to override the specific business rule and pay the claim. Assessing rules are configured as warnings within the IFF, and when triggered result in an onscreen message directing the SO to refer to prior assessing rulings for further guidance when assessing the Item.

17. ANAO's review of the assessing rulings in the IFF identified that the assessing rulings stored in the IFF generally provide clear guidance, which promotes the correct and consistent interpretation and application of the assessing rules by SOs when assessing a claim. However, their currency and validity is not consistently maintained when new rules are added to an Item.

For example, ANAO found instances where current assessing rules made reference to other Items that have since been abolished.

Service Officer Assessed Claims – Chapter 3

18. To maintain and improve the quality of processing of Medicare claims MA has established a number of activities that aim, over time, to ensure, monitor, maintain, and improve the quality of processing of Medicare claims. These quality activities are of particular importance where manual processing of a claim is involved. Manual processing can include the manual entry of a claim by a SO and/or the manual assessing intervention by a SO that can be required even for claims entered using systems[14].

19. The quality activities undertaken by MA include:

- a well defined and understood process to support SOs with manual claims assessing and processing;
- daily testing of a system selected sample of claims from prior day processing (Quality Control System process);
- a systematic review of certain classes of manually overridden business rules (Medicare Data Validation); and
- a defined process to assess and improve the quality of claims, known as the Continuous Data Quality and Improvement framework (CDQI framework).

20. A number of mechanisms exist to support a SO during the assessing and processing of a claim, which includes: documented guidance; support from their supervisors; and state level helpdesk support. If a state level helpdesk is unable to clarify an issue it can be referred to a helpdesk run by the Medicare Policy Team in the national office. However, if an issue is resolved by a state level helpdesk it will not be communicated to the national office, or to other state offices, and may exist nationwide but go unidentified by other state offices.

Quality Control System

21. The Quality Control System (QCS) is used by MA to automatically select a sample of Medicare transactions, processed by a sample of SOs on the prior work day, for review by their supervisor. Summary reports from QCS

[14] System entry of claims includes claims originating from electronic sources and bulk bill vouchers scanned using automatic IT based systems.

review results are then used by MA management to provide assurance over the accuracy of Medicare claims where manual entry and or operator intervention (assessing) occurred.

22. For the results from the QCS process to be a valid indicator of overall quality of manual claims processing the number of SOs selected daily, and the number of their transactions selected, must be statistically relevant. The statistical relevance of the sample size was not known by MA. As a consequence, the sample size may be too small to reliably indicate overall quality, or alternatively, if the sample is larger than it needs to be, there may be inefficiencies due to wasted effort.

23. Since January 2006, a quality initiative has been underway to monitor the consistency of the QCS manual reviews of claims undertaken by supervisors. The 'Aim-for-Accuracy' initiative has involved the conduct, progressively, in each Medicare office across Australia of a non routine review to assess the consistency of the reviews performed in the QCS process. Progress reports on the 'Aim-for-Accuracy' reviews indicated that, during the period the initiative was underway, error rates reduced. The 'Aim-for-Accuracy' initiative highlighted that the quality of the QCS process would benefit from the ongoing monitoring of the Medicare team leaders' QCS reviews.

Medicare Data Validation

24. The Medicare Data Validation (MDV) process aims to provide assurance that information entered on a patient's history is accurate and, if necessary, enables a claim record to be corrected (via a latter day adjustment (LDA)) before being archived. The MDV process contributes to the quality of MA claims processing by adding a timely mechanism to detect age, sex, fee or date of birth anomalies that are confirmed for validity by following up each anomaly with the originating Medicare office. The NSW state office staff members who perform the daily MDV checking for all of MA have a good understanding of the process, which is embedded into their daily operational activities and is performed consistently. However, the MDV process is not integrated with other quality processes in MA.

National Continuous Data Quality Improvement Framework

25. MA has a defined National Continuous Data Quality Improvement (NCDQI) Framework to provide a consistent approach to the analysis and resolution of quality issues that are identified. This NCDQI Framework is supported by a National Continuous Data Quality and Improvement (NCDQI)

Section, which provides assistance to the national and state offices through the establishment, implementation and monitoring of projects and initiatives that flow from the NCDQI Framework process. Another key support for the NCDQI Framework is the Medicare programme Continuous Data Quality and Improvement Working Party (CDQI WP).

26. Much of the NCDQI Framework analysis work is initially undertaken by the cross-functional/cross-divisional CDQI WP, which includes staff from all teams involved with the delivery of the Medicare programme. The broad membership of the CDQI WP often enables the working party to identify the true nature of issues during its meetings, and develop strategies for their resolution. The NCDQI framework, through the support of the NCDQI Section and CDQI WP, has contributed to maintaining and improving the overall quality of the Medicare programme.

27. All of the quality activities (as discussed in Chapter 2) were found to contribute towards maintaining the quality of the Medicare programme. However, this was achieved though mitigating specific quality risks that were relevant to a specific part of the Medicare programme. It was found that the activities were undertaken without formal consideration of whether the risks covered by a specific activity were already covered by other quality processes. Indeed, the various quality activities are undertaken in a somewhat isolated manner and without necessarily having regard to each other. There is no mechanism in place to ensure the overall mix of quality activities is the most efficient and adequate mix.

28. The Medicare programme would benefit from MA monitoring whether the overall coverage provided by the current mix of quality activities is adequate and effective. This would address the risk that some quality risks may currently be mitigated by numerous and possibly overlapping controls and assurance mechanisms, while other quality risk areas may be either unmitigated or are only weakly controlled.

Information Systems Audit Analysis – Chapter 4

29. This audit utilised two Information System (IS) audit techniques to contribute towards the assessment of the accuracy of Medicare claims processing; data analysis and systems design analysis.

30. Data analysis was used to test a sample of prior Medicare claims. The claims selected for testing included Medicare claims from all submission methods and from all MA offices. The sample spanned the annual November

update to the Medicare Item fees, as this was considered to introduce specific risks that should be tested. The practicality of the computer processing and storage capacity resource demands required to cross-match and test the selected Medicare claim records was also considered. A sample of some 6.5 million[15] claimed Medicare Items were selected for testing.

31. The analysis required the validation of Medicare Claims History File (MCHF) records against Medicare's Consumer Directory (CD) and Item Fee File (IFF) databases and a Department of Health and Aging (DoHA) Medicare Benefit Schedule (MBS) dataset. This required obtaining copies of relevant parts of these databases and datasets for analysis on an ANAO database. The records obtained by the ANAO contained no readily identifiable patient information.

32. The analysis of the test sample of claims showed that all claims were made for valid patients, as defined in the Medicare CD. Similarly, all Items claimed were valid Items that existed in the DoHA MBS. The testing of Items did however identify one Item where the fee amount was not updated during the annual November 2006 MBS fee update. It was found that this error was not due to a fundamental breakdown of a process, but rather resulted from a set of circumstances which are unlikely to be repeated.

33. In addition to the data analysis of a sample of claims, system audit techniques were also used to examine the design and operation of the systems used to process Medicare claims, with a view to identifying possible underlying design limitations and logic errors. The information technology systems were found to be capable of adequately supporting current Medicare programme processing requirements, and generally do. However, a design limitation with the current Medicare processing system can result in some information supporting a claim decision being lost.

34. When a Medicare claim is processed some of the details of the claim, including processing information, is recorded in the MCHF. The MCHF was designed to be a record of a patients claim history and not a record of the processing of the claim. The design review of the MCHF identified that where multiple processing indicators and reason codes are generated during the assessment of a claim, they overwrite prior codes and indicators, and as a result only the last of each is retained. These codes represent the record of why a claim may or may not have been paid, and as such are important administrative records that should be retained.

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[15] 6 499 841.

Agency responses

35. The Chief Executive Officer of Medicare Australia provided the following response to the proposed audit report:

> Medicare Australia welcomes the assurance provided by the ANAO's report that our information technology systems and complementary support and quality activities achieve the processing of large scale Medicare claims transactions accurately and in a timely manner. This is a positive outcome in providing confidence to the community about the integrity of the Medicare program.
>
> Medicare Australia agrees with the recommendations and audit findings. We are actively taking steps to implement the recommendations. We are committed to continually seeking to improve our business processes, including the electronic lodgement of Medicare claims and the quality of Medicare claims processing.

36. The Secretary of the Department of Human Services provided the following response to the proposed audit report:

> The Department of Human Services (DHS) welcomes the report by the ANAO and recognises that the Medicare claims processing system is one of the highest volume transaction systems in Australia. DHS notes that, overall, the proposed audit report recognises that the relevant Medicare Australia system controls adequately support reliable processing of claims and that Medicare Australia works continuously to improve access to its services.
>
> DHS notes that Medicare Australia agrees with the recommendations and has already taken action to implement activities to address the recommendations. DHS supports the implementation activities being undertaken.
>
> The ANAO report states that Medicare Australia has established a number of activities that aim to ensure, monitor, maintain and improve the quality of processing of Medicare claims. DHS acknowledges that these are particularly important where manual processing of claims is involved.
>
> DHS recognises that the challenges for Medicare Australia are already supported by system controls and guidance material to mitigate the risk of error, and appreciates the ANAO's assistance in improving the rigor and robustness relating to the configuration of business rules.

Recommendations

37. The ANAO made four recommendations aimed at achieving further improvements in both system and manual processing of Medicare claims and the associated quality systems. Medicare Australia agreed with all four recommendations.

Recommendations

Recommendation No. 1

Para. 2.34

The ANAO recommends that Medicare Australia review the configuration of system based business rules in the Item Fee File to ensure that:

a) all legislatively based restrictions are coded as such;

b) where there is no discretion and an operator override should never be performed, the system setting should not allow the operator to override the business rule; and

c) assessing rules that are no longer applicable, or refer to historical Items, are end-dated so that they do not display on the screens of staff processing claims and are replaced by up-to-date versions as necessary.

Medicare Australia response: Agreed

Recommendation No. 2

Para. 3.17

The ANAO recommends that Medicare Australia develop an approach to capture, classify, and analyse the queries received by each of the state and national level Medicare assessing helpdesks, with a view to identifying a national perspective on:

a) areas of possible ambiguity regarding the correct interpretation of Medicare business rules; and

b) where improved guidance might be needed to better support Service Officers to consistently apply Medicare business rules and make correct determinations of Medicare benefit claims.

Medicare Australia response: Agreed

Recommendation No. 3

Para. 3.30

The ANAO recommends that Medicare Australia review the Quality Control System (QCS) sampling methodology to determine if it is adequate for the functions it is used for, including whether:

a) the basis for inferring the quality results obtained from the QCS reviews to the whole Medicare claim population is statistically sound; and

b) the method used to select Service Officers for QCS reviews provides adequate review of Service Officers in a given time period to support its quality control function over manually processed claims.

Medicare Australia response: Agreed

Recommendation No. 4

Para. 3.69

The ANAO recommends that Medicare Australia develop a mechanism to monitor and coordinate the overall coverage provided by the various quality activities that support the Medicare programme. Such a mechanism should determine whether:

a) the current range of quality activities provide adequate and effective assurance over the accuracy of Medicare processing;

b) the coverage provided by the quality activities provides the most efficient mix for the Medicare programme; and,

c) there are opportunities to better integrate the various quality activities undertaken at the local, state and national level to improve their overall efficiency and effectiveness.

Medicare Australia response: Agreed

Audit Findings and Conclusions

1. Introduction

This chapter provides background information on Medicare Australia and on its processing of claims. It also provides an outline of the approach taken in this audit.

Introduction

1.1 The Medicare programme ('Medicare') was introduced in 1984 to provide affordable and accessible health care to eligible Australian residents. It provides subsidised access to medical and hospital services for all Australian residents and certain categories of visitors to Australia.

1.2 Medicare Australia (MA), which is part of the Human Services Portfolio[16], is the agency responsible for administering the delivery of Medicare[17]. In 2006–07, there were 21.1 million people enrolled in Medicare and a total of $11.8 billion in Medicare benefits were paid with the processing of 257.9 million Medicare services[18]. This number of services and customers makes the Medicare claims processing system one of the highest volume transaction systems in Australia.

1.3 The Minister for Health and Ageing has policy responsibility for the Medicare programme. Accordingly, MA is responsible for administering Medicare in accordance with policies developed by the Department of Health and Ageing (DoHA) and approved by the Minister. The policies developed by DoHA determine the nature, circumstances and extent of medical services covered under Medicare.

Legislative basis for Medicare

1.4 Legislation covering the main elements of the Medicare programme is contained in the *Health Insurance Act 1973* (the Act). The Act provides that

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[16] Before 1 October 2005, MA operated as the Health Insurance Commission under the *Health Insurance Commission Act 1973* (HIC Act). On that date, the *Human Services Amendment Act 2005* commenced and the HIC Act became the *Medicare Australia Act 1973*.

[17] In addition, the agency is responsible for the administration of the Pharmaceutical Benefits Scheme, the Australian Organ Donor Register and as part of the virtual agency, the Family Assistance Office, delivers Family Assistance programmes. Across the various programmes that MA administers, the agency processes more than 500 million transactions each year and is responsible for providing over $30 billion in benefits to the Australian public and to health care providers. *Medicare Australia Annual Report 2006–07*, p. 11.

[18] ibid, p. 25. The number of persons enrolled in Medicare includes non-residents (long-term visitors – more than 6 months – and eligible short-term visitors).

Medicare benefits are payable for medical expenses incurred in respect of professional services[19]. Section 3 of the Act provides that such services must be 'clinically relevant' that is:

> means a service rendered by a medical or dental practitioner or an optometrist that is generally accepted in the medical, dental or optometrical profession (as the case may be) as being necessary for the appropriate treatment of the patient to whom it is rendered.[20]

1.5 For Medicare benefits to be payable, the relevant professional service and the fees for the service must be included in the Medicare Benefits Schedule (MBS). To be included in the MBS, the relevant professional service must be provided for under Part II of the Act and listed in supporting regulations[21]. The MBS is updated each November to include changes flowing from the changes to the relevant regulations. The majority of changes in the November update are to allow for the annual adjustment of the fees payable for the professional services.

Medicare claims processing

Background

1.6 MA is continually working on improving the ease with which citizens can access services it delivers. To achieve this for the Medicare programme, the claiming and payment methods made available to claimants have evolved since the programme's inception. To facilitate this, MA has been a relatively early adopter of emerging technologies and as a result has a dynamic Information Technology (IT) environment. The introduction of new claiming and payment methods has often used new and emerging technologies, which has required the retrofitting of existing older systems. For example, some of the more recently introduced claiming methods, such as Medicare Online[22],

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[19] Health Insurance Act 1973, s10(1).

[20] Health Insurance Act 1973, s3.

[21] The supporting regulations are: the Health Insurance (Diagnostic Imaging Services Table) Regulations 2006; the Health Insurance (General Medical Services Table) Regulations 2006; and the Health Insurance (Pathology Services Table) Regulations 2006.

[22] Medicare Online was introduced in 2002 to enable medical providers to lodge claims, including Medicare bulk bill, private claimant and DVA claims over the Internet, and to submit information to the Australian Childhood Immunisation Register.

involve the use of Internet based methods which have to connect with mainframe systems that can be more than twenty years old.[23]

1.7 As well as the need for changes to MA systems to enable the introduction of more claiming methods, there have also been a number of programme initiatives which have required MA to retrofit new business rules into existing processing systems. For example, programmes such as the Location Specific Practice Number (LSPN)[24] and the Medicare Safety Net[25] have required modification of the existing assessing and processing IT modules.

1.8 There are two claim types for Medicare: 'bulk bill' and 'patient claim'. Bulk bill involves the service provider (such as a medical practitioner or optometrist) undertaking to accept the Medicare benefit as full payment for the service. Patient Claim occurs when the fee charged by the provider may or may not equal the Medicare benefit, and the claimant presents an account/receipt to Medicare Australia for processing and payment[26].

Processing stages

1.9 The processing of Medicare claims can be considered in three broad stages – input, processing and payment, as represented by Figure 1.1.

[23] The older electronic claiming methods available to providers of services attracting a Medicare benefit relied on in-house developed software technologies from the data input right through to processing (that is, terminal to mainframe). The newer methods now available to service providers operate using third-party software (which service providers are able to purchase commercially) and the Internet.

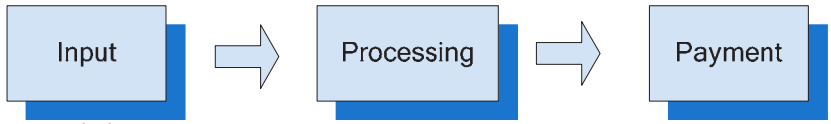
[24] The *Health Insurance Amendment (Diagnostic Imaging, Radiation Oncology and Other Measures) Act 2003* requires sites that provide diagnostic imaging or radiation oncology services to be registered with MA for Medicare benefits to be payable. Registered sites and bases for mobile equipment are allocated a Location Specific Practice Number (LSPN). The LSPN is a unique identifier which is required to be submitted as part of each Medicare claim for diagnostic imaging or radiation oncology services.

[25] The Medicare Safety Net is an initiative designed to reduce the out-of-pocket medical expenses incurred by a patient in a year. The cost of Medical expenses incurred in a year is monitored, and when an annual Safety Net threshold for an individual or family has been reached, the benefit payable is increased. This is discussed further in paragraph 4.15.

[26] 'Patient Claim' claim types can also be submitted by service providers on behalf of the claimant. This can be done by service providers either electronically, using Medicare Online, or manually by dropping or sending claims into Medicare Australia.

Figure 1.1

Claims processing stages



Source: ANAO analysis

Input

1.10 In seeking to ensure that Medicare is readily accessible to eligible persons, MA provides numerous ways to submit Medicare claims. These methods or claim types are:

- *manual bulk billing vouchers*: service providers (such as medical practitioners and hospitals) submit manual bulk bill vouchers to MA in batches;
- *personal lodgement*: patients or their agents submit their medical receipts at MA offices or agencies;
- *mail/telephone/facsimile/Medicare Access Points*: claimants send in their claims by mail or facsimile for processing. Details can be provided by telephone and medical receipts sent in afterwards; and
- *electronic submissions by service providers and health funds*: the electronic methods include: Simplified Billing, where health funds submit claims electronically on behalf of claimants; Medclaims[27], which uses Electronic Data Interchange (EDI) for submission of bulk bill claims; and Medicare Online, where service providers submit electronic claims for claimants using the service provider's own system. This can be done for both 'bulk bill' and 'patient' claim types.[28]

1.11 The claim submission method through which the largest number of claims are submitted is the bulk billing method. Bulk bill claims can be submitted to MA by the health service providers using either manual bulk bill vouchers or electronically. MA's processing of manual bulk bill vouchers utilises sophisticated scanning and optical character recognition (OCR)

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[27] On 1 October 2007, MA stopped taking new registrations for Medclaims, and intends, over time, to transition current users of this older technology to other options.

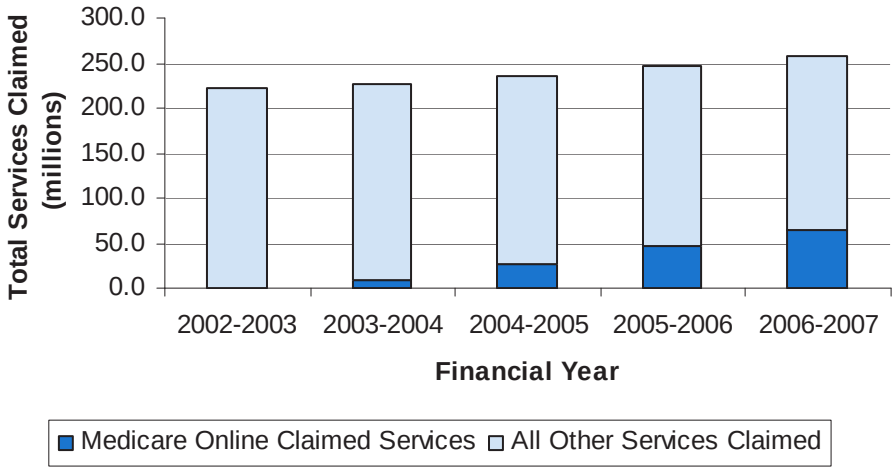
[28] From mid-2007, the electronic submission of claims is being extended through *Medicare Easyclaim* to the processing of claims for reimbursement of doctors' bills, using the electronic funds transfer at the point of sale (EFTPOS) terminal in the doctor's surgery. Medicare payments will be deposited direct into claimants' bank accounts.

technologies to transform data entered manually on bulk bill vouchers into an electronic form.[29] MA receives electronically submitted bulk bill claims via Medicare Online or through older dedicated connections between MA and health service providers[30].

1.12 In recent years there has been a significant increase in the number of claims submitted via Medicare Online. In 2006–07, 24.6 per cent of claims were submitted through the Medicare Online channel, up from 18.8 per cent in 2005–06[31]. In 2006–07, 59.2 million bulk bill services and 4.4 million patient claimed services were submitted using online claiming channels[32]. The number of claims submitted electronically via Medicare Online has increased steadily, as shown in Figure 1.2, and is expected to increase significantly with the gradual introduction of *Medicare Easyclaim* from mid 2007[33].

Figure 1.2

Medicare Online claimed services



Source: ANAO – based on 2002–03 to 2006–07 Medicare Australia annual reports

[29] The scanning process requires some operator intervention when hand-written characters cannot be system-read with an acceptable level of confidence. This operator intervention is only concerned with interpreting characters and is distinct from the claim determination process.

[30] Prior to the introduction of Medicare Online, electronic submission of claims, for example would have required a service provider to use dedicated network connections to Medicare Australia. By contrast, Medicare Online uses the shared Internet instead of dedicated connections.

[31] Based on *Medicare Australia Annual Report 2006–07*, p. 25 & 28, and *Medicare Australia Annual Report 2005–06*, p. 37 & 42.

[32] *Medicare Australia Annual Report 2006–07*, p. 28.

[33] This is expected as Easyclaim offers claimants the capacity for their Medicare claims to be processed at the provider's premises at the same time as they are paying their bill (that is, with their benefit transferred into their bank account via EFTPOS).

Processing

1.13 As indicated in paragraph 1.10, there are numerous ways in which a Medicare claim can be submitted for processing. Whether a claim is entered manually or via an IT system[34], the assessment of the claim, and the subsequent calculation of the benefit payable, is performed by the same mainframe based processing system[35]—the processing system. The majority of claims enter the processing system via IT systems based data entry[36]. For example, of the claims in the sample tested by the ANAO for this audit, 86.45 per cent relied on system based entry, with only 13.55 per cent requiring manual entry into the processing system.

1.14 The assessment of every claim involves testing the claim against system based business rules. If a business rule is violated during this testing, a warning or error message will be generated. In such circumstances the assessing of the patient's claim will require manual intervention by a Service Officer (SO). This manual assessing intervention is sometimes required because of the complexity and variety of patient scenarios. Manual intervention by the SO provides the opportunity to consider the individual circumstances of the patient, which may include identifying the need to seek further information from the claimant to support the claim. If it is determined that the claim is valid the SO can enter an override code into the system to allow the claim to be processed.

1.15 Most claims are assessed solely by the system applied business rules and will not require SO assessing intervention. This is the case irrespective of the method used to submit the claim, and includes claims manually keyed into the processing system at MA branches. Of the Medicare claims tested in this audit, only 1.3 per cent required manual assessing intervention by a SO (see Figure 1.3).

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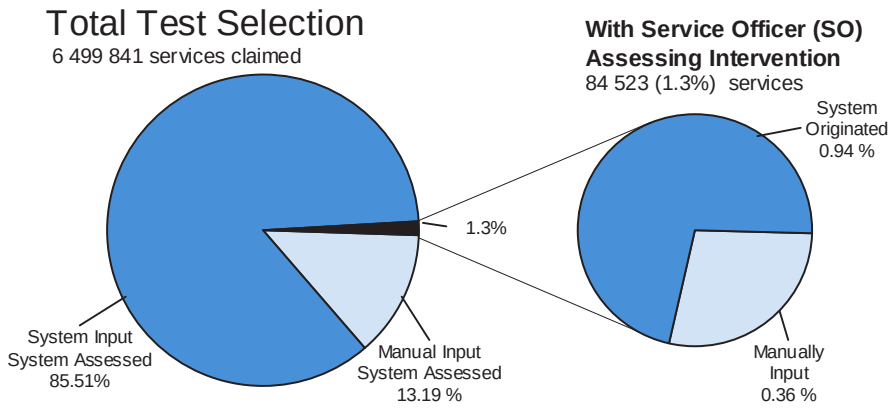
[34] This includes bulk bill voucher batches that are scanned into the MA system using OCR technology. See paragraph 1.11.

[35] With the exception of a small number that are processed manually as outlined in paragraph 1.17.

[36] This occurs either by entry via OCR scanning of manual bulk bill vouchers or through an electronic input by service providers (via for example, EDI or Medicare Online).

Figure 1.3

Service Officer processing



Source: ANAO analysis of a sample of Medicare Claims.

Notes: The ANAO's sample was drawn from claims submitted and processed between 25 October and 7 November 2006. The sample consisted of 3 745 647 unique claims, which covered 6 499 841 Items. These claims were for services that were delivered by service providers and processed by MA within the two week period selected. Claims processed by MA during that two week period but which related to services delivered outside the period were not included. In addition, some classes of claims were also not included. These were claims which had been adjusted after processing (Latter Day Adjusted), rejected claims, and where claims spanned more than one claim record (required where more than 12 Items are claimed together).

1.16 If the assessing part of processing is completed without errors, or with errors being manually over-ridden or corrected, the calculation of the benefit entitlement for the claim can be performed. The benefit entitlement can vary from the prescribed MBS amounts for a number of reasons. These include:

- a patient's Medicare Safety Net balance;
- the fee charged being less than the scheduled fee[37]; and
- a patient's concession status. [38]

1.17 While the majority of claims are processed through the mainframe processing engine, some claims require manual processing due to their complexity. This applies to partially paid accounts where Medicare Safety Net

[37] Where a charge is less than the schedule fee, the claimant is only reimbursed for the amount paid.

[38] Where a claimant is the holder of a Commonwealth Concession card (including – pensioner, health and seniors cards) and the service is bulk billed, the service provider is eligible to receive a payment in addition to the benefit for the service - by claiming an additional MBS Item number (for example, 10990, 10991, or 10992). Note: These items only apply for unreferred services.

balances are reached. Processing of these claims is done by specialist assessing officers in each MA state office[39]. These state office assessing officers are experienced in the manual processing of claims.

Payment

1.18 After the claim entitlement has been calculated, the claim can be processed for payment. The method of payment is dependent on the channel that was used to submit the claim and whether the claimant (patient[40]) has paid the service provider. Current methods are cash, cheque and electronic funds transfer (EFT) and reverse EFTPOS.

1.19 Where an account has not been paid, a cheque will be issued to the claimant in favour of the service provider. If a cheque, made in favour of a service provider is not presented within 90 days, and the service provider is a general practitioner participating in the 90 day cheque scheme, the cheque will be cancelled and an EFT payment will be made directly to the service provider. If an account has been paid, claimants can choose to have their entitlement paid through EFT, by cheque issued in their favour or, if the claim is made at a Medicare office, in cash.[41]

Organisational responsibilities

1.20 Within MA, the Medicare and Associate Government Programs Division (MAGPD) has the overall responsibility for the Medicare programme. It is responsible for the development of policy and advice to support the delivery of the Medicare programme by MA. To achieve this MAGPD also relies on operational tasks and support functions being provided by other divisions within MA, including:

- Public/Provider Services Division (PPSD) (formerly the Customer Services Division), which has the primary responsibility for the processing of Medicare claims through PPSD staff located in the

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[39] The national office for Medicare is in the ACT. Each state has a 'State Office' that co-ordinates and manages the state operations and branches within its state. State operations include; the receipt of manual Medicare claims by mail and re-distribution to branches for processing, provision of state level Medicare assessing helpdesks, and state data quality teams. The Melbourne and Sydney state offices also undertake the scanning of manual bulk bill vouchers.

[40] The patient is often the claimant of the Medicare benefit, however this need not be the case, for example parents and guardians of children.

[41] Cash payments are subject to Medicare office cash limits. Where the claimed amount exceeds the office cash limit and a claimant does not want to be paid by EFT or wait for a system generated cheque to be posted, a manual cheque can be provided on-the-spot by the Medicare office.

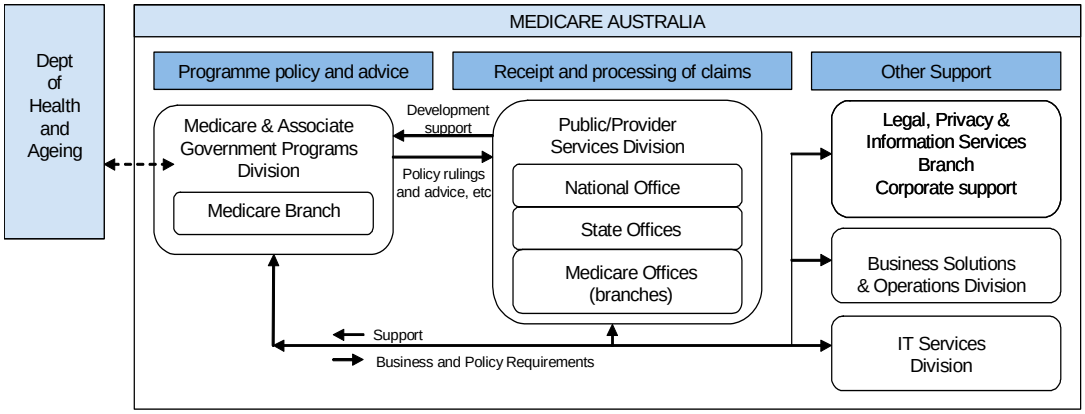
national office and in the various state offices and Medicare offices (branches);

- IT Services Division, which is responsible for IT support, including management of the computer system used in the processing of claims;
- Business Solutions and Operations Division (formerly the eBusiness and Development Division), which is responsible for identifying and developing opportunities to increase the usage of e-business practices and technology by MA; and
- other areas such as the Legal, Privacy and Information Services Branch and corporate services areas (finance and human resources) also provide support.

1.21 These responsibilities are summarised in Figure 1.4.

Figure 1.4

Organisational responsibilities for Medicare claims processing



Source: ANAO analysis

Audit objective, scope and methodology

Audit objective and scope

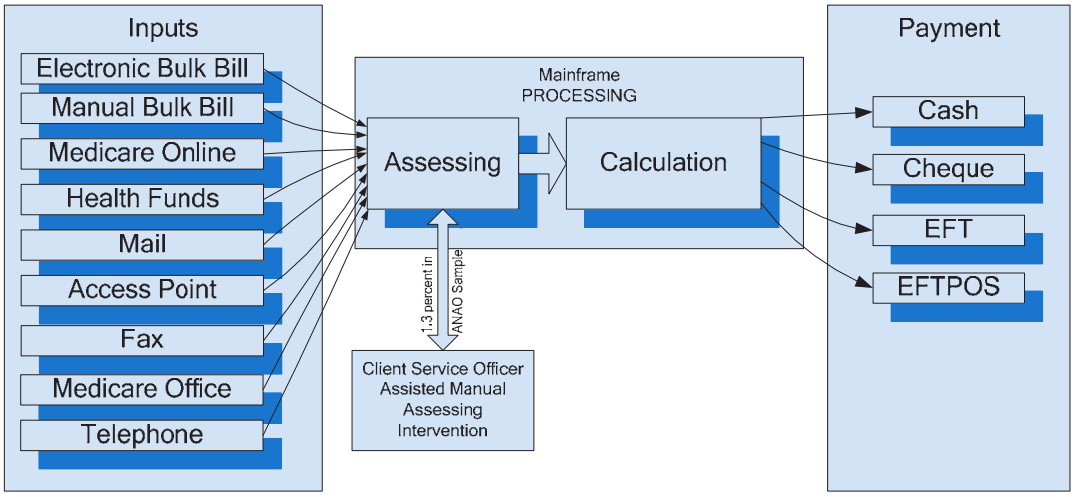
1.22 The objective of the audit was to examine the accuracy of Medicare claims processing, including the adequacy and operation of supporting manual and system based processes and controls.

1.23 All claims, irrespective of the channel through which they are submitted or how payment is made, are processed by common mainframe based assessing and calculation software that uses defined systems based

business rules. In addition, a small percentage of these claims may require the intervention by a SO, to consider the patient's claim scenario when manually applying the business rules. The system applied business rules on the mainframe are therefore central to the accuracy of Medicare claims processing as is, where it occurs, any manual assessing intervention by SOs. The convergence of claims at the processing stage and their divergence afterwards provided start and end points for the scope of the audit (see Figure 1.5).

Figure 1.5

Audit scope



Source: ANAO analysis

1.24 The accuracy of claim data submitted for processing and the validity of the supporting Consumer Directory database[42] were not assessed as part of this audit. The Item Fee File (IFF) database, which contains the business rules used for the processing of Medicare claims, was examined as part of this audit.

1.25 The criteria for the basis of testing were:

- Medicare's systems and manual quality control mechanisms provide a high level of assurance that correct benefits are being provided;

[42] The Consumer Directory (CD) database is MA's record of who is enrolled for Medicare benefits and their particulars (for example date of birth and sex). It is referred to during the processing of a Medicare claim to confirm the eligibility of the claimant and that the service provided to the claimant is valid for that claimant (for example some services covered by Medicare are sex and/or age specific).

- Medicare benefits are only provided for valid patients[43], for valid Medicare Benefits Schedule items (Items); and
- the processing of Medicare claims is based on the correct MBS Item fee amount.

1.26 As briefly introduced in paragraph 1.16 there are a number of programme initiatives that can result in a benefit entitlement being different from the MBS Item fee amount. In addition, a benefit payable can vary due to the nature of other items claimed at the same time or within a given period (this is discussed further from paragraph 4.11). As a result, the testing of the actual benefits payable for a single Item could require the analysis of a patients' prior Medicare transactions for a much greater period, even years. This was impractical in the context of this audit. During the processing of a Medicare claim the actual benefit payable and the nominal MBS Item benefit amount used as the basis for the benefit payable calculation is recorded. It was this nominal MBS Item amount that was tested by this audit.

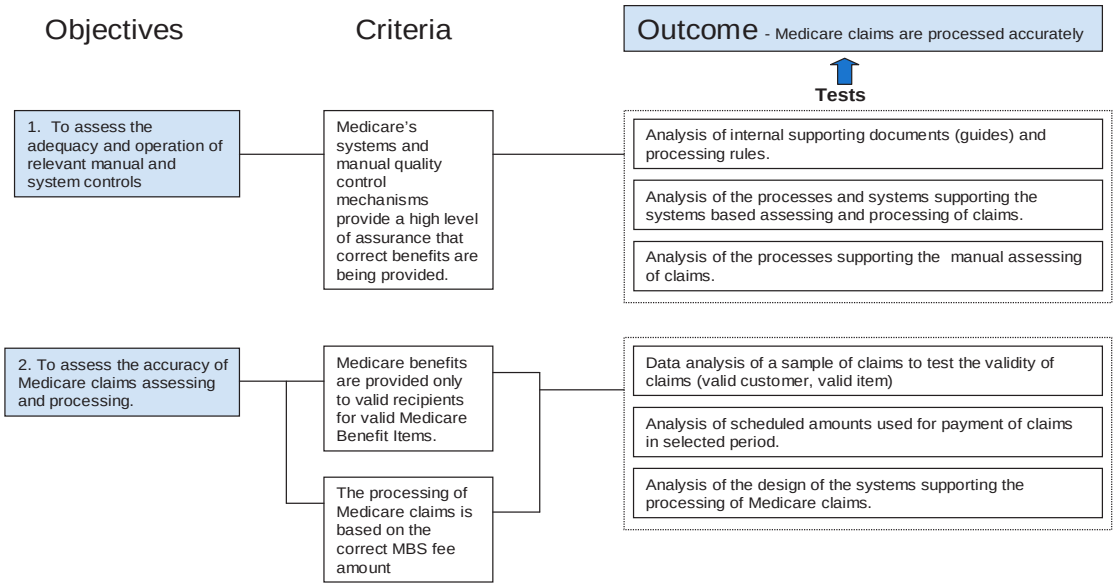
[43] Only persons eligible and enrolled in the Medicare programme were considered valid patients for the purpose of this audit. Eligibility for Medicare is not just limited to Australian citizens but includes persons who are; permanent residents in Australia, New Zealand citizens, certain groups of applicants for permanent Australian residency visas, and visitors from some other countries who have a reciprocal health care agreement with Australia.

Audit methodology

1.27 The audit approach is summarised in Figure 1.6 below.

Figure 1.6

Audit approach



1.28 The general audit methodology included:

- examining relevant MA internal documents to determine assessment and processing rules;
- comparing the assessment and processing rules with the provisions of relevant legislation to check that they were consistent with the legislation;
- meetings with relevant MA staff, including from national and state data quality teams;
- meetings with relevant MA staff from operations, policy and information technology areas of the organisation, who support Medicare;

- visits to a sample of state offices[44], to assess the consistency and adequacy of assessment quality processes nationally;
- interrogating a period of transactions using Computer Aided Audit Techniques (CAATs);
- examining the design and operation of computer based processing through documentation review and meetings with MA staff; and
- consultation with DoHA, as a stakeholder in the effective delivery of the Medicare programme, to identify quality processes.

1.29 The audit was conducted in accordance with the ANAO Auditing Standards and at a cost to the ANAO of $379 715.

Structure of report

1.30 Chapters 2 and 3 examine the controls used to provide assurance over the processing of Medicare claims:

- Chapter 2 considers the controls that exist to provide assurance over the systems based assessing of Medicare claims; and
- Chapter 3 considers the controls that provide assurance of claims where manual SO assessing intervention is required.

1.31 Chapter 4 outlines the nature and extent of Computer Aided Audit Techniques that were undertaken for this audit. This includes the results from the substantive assessment of the accuracy of a sample of Medicare claims and the examination of the systems supporting the Medicare programme.

[44] The audit team visited the South Australian, Victorian, and New South Wales state offices.

2. System Assessed Claims

This chapter analyses the processes used by Medicare Australia to ensure the accuracy of the systems based assessment of Medicare Claims. It examines the operation of the system used to set and maintain the system based business rules, and the processes supporting its reliable operation.

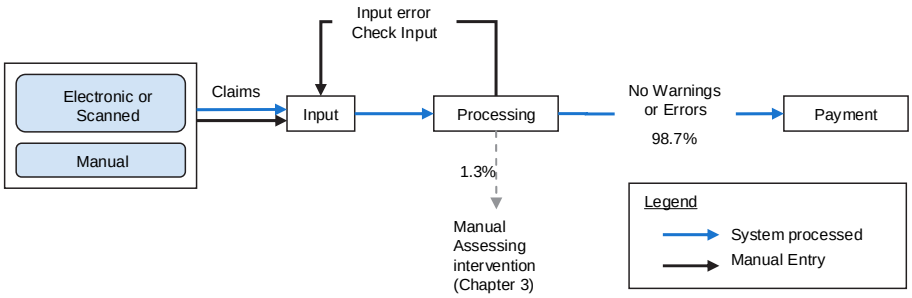
Background

2.1 The use of a computer system to apply business rules can provide assurance of accuracy, as system applied business rules are consistently processed. However, the assurance provided can only be maintained over time if controls are in place to ensure that only correct and authorised changes are being made to the settings and configuration of the system.

2.2 All but a very small proportion of Medicare claims are assessed automatically by the system with no manual assessing intervention by a Service Officer (SO) (see Figure 1.3). This is the case whether the claims are submitted electronically, scanned into the system using OCR technology or manually keyed into the system. Of the claims in the audit test sample 98.92 per cent of claims that were submitted either electronically or scanned into the system were processed automatically without any manual SO assessing intervention. In respect of manually keyed in claims, 97.31 per cent of these claims were also processed automatically. Overall this represents 98.7 per cent of the claims tested in the audit sample (see Figure 2.1).

Figure 2.1

Automatically processed claims



Source: ANAO analysis[45]

System based business rules

2.3 As noted in Chapter 1, the first step in processing claims is to establish the basic validity of each claim. Once claims pass the basic data validity tests,[46] they are assessed (tested) using the system based business rules that are defined in the Item Fee File (IFF). The IFF is a Medicare system that contains information and business rules about Items covered by the Medicare Benefits Schedule (MBS). The IFF is referred to during the claims assessing stage to determine the validity of a service, restrictions that may apply and the benefit payable for the Item. The IFF is MA's local electronic version of the MBS. The MBS is produced and maintained by DoHA. DoHA publishes the MBS in a hard-copy version for service providers and in an electronic version for third-party service provider software developers and for MA.

2.4 There are a number of events that can lead to a requirement to make changes or updates to the configuration of the system based rules in the IFF. These events broadly include the annual fee changes, legislative changes and in response to business efficacy requirements.[47]

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[45] Percentages based on ANAO analysis of a sample of claims comprised of all claims submitted and processed between 25 October and 7 November 2006. The sample consisted of 3 745 647 unique claims, which covered 6 499 841 Items. This represented claims for services that were delivered by service providers and processed by Medicare within the two week period selected. It excluded several classes of claims. Specifically, where claims had been adjusted after processing (Latter Day Adjusted), rejected claims, and where claims spanned more than one claim record (required where more than 12 Items are claimed together).

[46] For example, all data expected has been entered and the claimant, provider, and MBS Item are all valid.

[47] Business efficacy requirements are discussed further in paragraph 2.16.

2.5 Updates to the IFF are made by the Medicare Assessing Section (MAS). There are two teams in the MAS involved in these updates, the IFF Update Team and the Policy Team. An update will be made to the IFF by the IFF Update Team upon a written request from the Policy Team. The updates are initially entered into an off-line system, which is checked by the Policy Team prior to an overnight upload into the live system. Updates to the IFF can include the addition, removal, or change to an Item. Changes to an Item can include the setting or removal of business rules that trigger system errors or warnings. It can also include the addition, removal, or change to an assessing ruling[48] associated with an Item.

2.6 The MAS Policy Team is responsible for ensuring that the rules configured in the system are consistent with legislative requirements, guidance from DoHA and the expectations of the Medicare Australia Chief Executive Officer (CEO).

2.7 There are two categories of system applied business rules[49] that have differing types of system messages if violated, specifically:

- Error messages – where the claim will be rejected unless the reason for the error message is corrected (generally by correcting any data errors or by assigning a Processing Indicator (PI) code to override the restriction). For example, where an invalid Item number may have been inadvertently keyed in; and
- Warning messages – where an operator can over-ride the warning and allow the claim to be paid on the basis of the already supplied data. To over-ride a warning the operator manually enters a PI or Reason (RSN) code, which becomes a record of the reasoning used by the SO for either paying or rejecting the claim.

2.8 When reviewing a warning or error message the SO can refer to a number of mechanisms to assist them in determining whether a claim is processed or rejected. The mechanisms used to support the manual assessing of business rules are discussed in Chapter 3.

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[48] Assessing Rulings are used to guide the manual application of business rules by a SO. They are examined in Chapter 3.

[49] Business rules that are tested by the system during the processing of a claim.

Changes in business rules

2.9 Changes in the business rules for Medicare can occur for the following reasons:

- to take up legislative changes;
- to implement Ministerial decisions;
- to implement changes to, or new, Government policy;
- to improve business efficacy; or
- to remove possible ambiguities.

Legislative changes

2.10 In November of each year the regulations[50] that specify the Medicare benefit amounts are replaced to allow for an adjustment to the benefit amounts and there is a major update of the MBS at this time to reflect the new benefit amounts. There may also be some incidental changes to the regulations (such as an adjustment to an existing Item or the creation of a new one) that are identified during intervening periods and are generally made effective during the smaller update round in May each year. The IFF is also updated manually for incidental legislative changes to the MBS that occur outside the November and May updates, as described in paragraph 2.5.

2.11 The November and May changes to the MBS regulations require Item fee and description updates be made to the IFF. These changes are performed using a batch upload of the Medicare Benefit Schedule fee and description details only, via an electronic file[51] provided to MA by DoHA, with any business rule changes being manually re-configured after the upload.

Ministerial 3C determinations

2.12 Generally only health services listed in the table of MBS Items, as defined in the regulations under the *Health Insurance Act 1973* (the Act) are covered by the Medicare programme. Health services covered by Ministerial determinations made under section 3C of the Act are the exception. Section 3C

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[50] The relevant regulations are the: *Health Insurance (Diagnostic Imaging Services Table) Regulations 2006*, *Health Insurance (General Medical Services Table) Regulations 2006*, and *Health Insurance (Pathology Services Table) Regulations 2006*.

[51] This file is the same as the electronic file available from the DoHA website, which was used as the authoritative source of MBS details by this audit.

of the Act allows the Minister to determine that a health service can be considered an Item covered by Medicare, without the Item's inclusion in the MBS.

2.13 The 3C determination process provides a more responsive mechanism than the routine process used to update the regulations. It is often used where an Item may;

- have a restricted period of validity, or
- only be claimed by a limited patient group, or
- only be provided by a limited group of providers.

Policy changes

2.14 The development and management of MBS Items are the responsibility of DoHA. Five committees assist DoHA in these tasks. These are the Medicare Benefits Consultative Committee (MBCC), the Medical Services Advisory Committee (MSAC), the Pathology Services Table Committee (PSTC), the Radiology Management Committee (RMC) and the Optometrical Benefits Consultative Committee (OBCC). The principal committees are MSAC and MBCC. MSAC concerns itself with new and changing services, while the MBCC focuses on reviewing services or groups of services in the General Medical Services Table of the MBS. The other committees (PSTC, RMC and OBCC) assist in determining changes to Items relevant to their areas of expertise in the respective sections of the MBS. However, all new services or technologies are considered by MSAC.

2.15 MA is a member of MBCC, PSTC, RMC and OBCC. Accordingly, MA is in a position not only to keep abreast of potential changes being considered by the committees but also to identify and highlight any service delivery issues that may be associated with a proposed change. This enables the MBCC, PSTC, RMC and OBCC to take into account the likely impact of proposed changes on MA operations, and provides MA with the opportunity to prepare for changes.

Business efficacy

2.16 Some business rules can be set for business efficacy reasons, such as the detection of possible duplicate claims. This also includes the setting of association rules between Items, which identifies Items that would not normally be expected to be claimed together ('contra-indicated'). The

determination and setting of contra-indicated Items is based on an assessment of clinical relevance as determined by a MA Medical Advisor.

Possible ambiguities

2.17 During the course of business, it may become evident that the circumstances in which an Item can be validly claimed may be unclear or ambiguous. Operational issues of this kind could arise as a result of a specific claim or from a broader issue identified by one of MA's quality processes (discussed in Chapter 3). Such operational issues are addressed by the National Assessing Section Policy Team. The Team can draw on advice from DoHA policy staff and, if needed, seek clarification from the relevant committee, to identify how such claims should be determined.

2.18 MA national office policy officers can also raise questions with policy area specialists within DoHA to assist in the determination of a claim assessment. Advice is sought in written form, and is kept on record to support the reason for the business rule then applied.

Analysis of Item Fee File changes

Authorised changes

2.19 The ANAO reviewed a sample of changes that had been made to the IFF to determine if changes were authorised and consistent with Medicare requirements. All changes examined by the ANAO had been authorised by an appropriate person within the Medicare Assessing Section Policy Team and, in the case of Item association/restriction rules, were authorised by a MA Medical Advisor. With the assistance of MA staff and a review of supporting documentation, it was also possible for the ANAO to determine the reason for and nature of the changes.

Accuracy of IFF changes

2.20 The calculation of the Medicare benefit payable for an Item is based on the scheduled fee set for an Item. The ANAO selected a sample of claims for this audit that were processed in a two week period, spread either side of the November 2006 MBS update. Within the ANAO's sample there were 2402 distinct Items that had been claimed, out of the possible 5140 Items[52]. Of the 2402 claimed Items tested, 1686 had undergone a fee change as at

[52] Based on unique Items in the DoHA November 2006 update. Does not include 3C Items.

1 November 2006. As previously stated, the ANAO tested a sample of claims that spanned the period of the annual fee change to increase the chance of identifying possible change-over issues.

2.21 The Medicare claims in the audit test sample were compared to the electronic version of the MBS that is publicly available from the DoHA website. This electronic website version is primarily used by third-party software vendors as the basis for updating claim submission software used by medical service providers. When a claim is processed, the scheduled fee for the Item is recorded in the claims history file. In most cases this will be the benefit paid, but there are a number of Medicare business rules that may alter this amount[53].

2.22 Within the tested sample, the ANAO identified an inconsistency for one Item between the Item fee amount recorded in the claims history file and the DoHA version of the MBS. It appears that a change to the fee for the Item was made in the November 2006 DoHA update to the MBS but that this was not reflected in the November 2006 update to Medicare Australia's Item Fee File. The ANAO identified three occurrences in the tested sample, all from the week following the November 2006 MBS update, where this Item was paid at the pre-November 2006 rate, a lower rate. The item in question was introduced into the MBS as a section 3C Ministerial determination[54], a class of items that prior to the November 2006 MBS update required the manual updating of the IFF to reflect any changes. For the November 2006 MBS update, through the agreement of DoHA and MA, the updating of the 3C determination Items was to be achieved using the batch upload process[55] that relied on the electronic file provided by DoHA. This error occurred inadvertently during the transition to this new process as the version of the electronic MBS file provided to MA by DoHA did not include the fee increase for the Item in question. MA advises the protocol for the update notifications from DoHA was reviewed as part of the November 2007 update process.

System applied business rules

2.23 The business rules used during claims processing, stored in the IFF, are the result of the mix of policy, legislative, and MA business requirements, and

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[53] Discussed further in chapter 4.

[54] As outlined in paragraph 2.12.

[55] As outlined in paragraph 2.11.

may have applied to an Item since its inception or been progressively added or revised over time. This collection of business rules stored in the IFF is not just a simple list of Items and an associated fee, as is found in the MBS electronic file, but consists of many lists (tables). These lists, through defined relationships, enable the recording of complex and often entwined business rules.

2.24 One such business rule dictates whether a system applied business rule can be over-ridden through the intervention of a SO. This is configured by setting an over-ride indicator in the IFF for a particular restriction or association.

2.25 ANAO's review of the underlying IFF database identified that when a restriction or association rule is entered into the database, there is also the capacity to record whether the rule arises from a legislative reason or has been developed to guide the determination. For example, the regulations may explicitly specify an age restriction for a particular Item[56] and a business rule is then entered into the IFF for this age restriction. In this circumstance, this requirement should be recorded as a legislative requirement.

2.26 ANAO's analysis of the IFF database identified that the capacity to identify the basis for business rules was not used consistently. Some Items with a clear legislative restriction were configured as 'Guide' only. In the ANAO's sample, 42 instances were identified, covering six Items, where there was an associated age restriction with a clear legislative basis but where the relevant system rules were configured as guidance only. While it is not desirable for the system to incorrectly categorise a rule as only guidance rather than as being a legislative requirement, of more concern is that these system rules were also configured to allow operator over-rides. Subsequent analysis of the 42 instances in the ANAO's sample confirmed that the age of the patient was appropriate for the Item that was claimed**.**

2.27 However, the risk that a Medicare benefit will be incorrectly paid for a patient who is not eligible under the relevant legislation for the benefit is increased where the relevant business rule in the IFF is not clearly identified as being legislatively based and operator over-ride is available for the rule that appears to be only a 'Guide'. The ANAO notes that in all cases where an age rule was configured as based on a legislative requirement the over-ride configuration was also appropriately set to not allow over-rides.

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[56] For example Item 717 which relates to a general health check targeted at patients in the age range of 45 to 49 years.

2.28 MA advised ANAO that the configuration of the 'Guidance' and 'Any operator' over-ride settings for rules with a clear legislative basis is inconsistent with their normal practice and that steps have been taken to review the configuration settings. This has included;

- correcting the configuration for all of the items identified by the ANAO,
- implementing a process to review the current settings of all relevant MBS items in the IFF to ensure that any age or gender related restrictions are appropriately configured as either 'Guide' or 'Legislative', and
- an enhancement to the IFF maintenance system[57] - to overcome an application limitation that previously prevented the legislative indicator being set for gender restrictions.

Assessing rulings

2.29 Some business rules are affected by the specific circumstances surrounding a claim. Such business rules are configured as warnings within the IFF that when triggered result in an onscreen message directing the SO to refer to prior assessing rulings for the Item. The assessing rulings are also stored in the IFF. Assessing rulings do not provide a detailed description of all of the business rules that apply to an Item but provide a summary of previous policy decision(s) that have been reached in relation to an Item, and guidance on how to apply them. For the most part, the assessing rulings provide background information on why a business rule has been applied to an item. The ANAO reviewed a sample of assessing rulings that were part of the electronically captured IFF data for this audit (details of data obtained are discussed further in paragraph 4.5)

2.30 Assessing rulings for an Item entered into the IFF are given a start date and an end date. Where the assessing ruling is expected to apply until a future change, it is given an end date of 09-09-9999. When SOs, and assessing helpdesk staff, query the system for the assessing rulings for a particular Item only the rulings that are marked in the system as effective as at the query date are shown. The rulings against an Item are presented on screen in chronological order and some rulings may supersede an earlier ruling. ANAO identified an example in relation to one Item where an earlier ruling appears to have been superseded by a new ruling, but because the earlier ruling had not

[57] Implemented effective 1 November 2007.

been end-dated, the superseded ruling would still be displayed to operators seeking guidance on current claims.

2.31 Parts of an assessing ruling may also refer to other Item numbers. The audit also identified instances where current assessing rules make reference to other Items that have since been abolished.

2.32 A number of the assessing rulings are quite complex in that they may require:

- an understanding of certain types of clinical procedures;
- ensuring that one Item is not delivered at the same time as another Item;
- ensuring that limitations on the number of Items are not exceeded or, where in some circumstances it may be clinically relevant, that there is adequate documentation from the service provider to support this;
- assessment of the duration of a certain procedure for it to comply with the requirements for the Item;
- ensuring that certain procedures are provided at the one location or specified types of location or by suitably qualified staff; or
- ensuring that a practitioner is medically or vocationally qualified to provide a particular service (for example, a medical practitioner must be vocationally qualified in acupuncture for payment to be made for an acupuncture-related Item).

2.33 The assessing rulings stored in the IFF generally provide clear guidance, which promotes the correct and consistent interpretation and application of the assessing rules by SOs when assessing a claim. However, because some superseded rulings continue to be displayed and others refer to discontinued Items, there is a risk that SOs could refer to a superseded ruling and as a result may make an incorrect determination.

Recommendation No.1

2.34 The ANAO recommends that Medicare Australia review the configuration of system based business rules in the Item Fee File to ensure that:

(a) all legislatively based restrictions are coded as such;

(b) where there is no discretion and an operator override should never be performed, the system setting should not allow the operator to override the business rule; and

(c) assessing rules that are no longer applicable, or refer to historical Items, are end-dated so that they do not display on the screens of staff processing claims and are replaced by up-to-date versions as necessary.

Medicare Australia response

2.35 Agree. As noted in paragraph 2.28 of the ANAO report, steps have already been taken by Medicare Australia to review the configuration settings:

(a) all legislative based restrictions are now coded as such;

(b) a review of all relevant Items in the Item Fee File has been completed by Medicare Australia to ensure that appropriate system settings are in place so that an operator override cannot be performed where there is no discretion; and

(c) Medicare Australia will revise all assessing rules. Medicare Australia is also developing an ongoing process which will ensure these rules will be updated in line with Item changes.

3. Service Officer Assessed Claims

This chapter examines the activities and functions that provide assurance over the accuracy of the processing of Medicare claims where processing by a MA Service Officer is required.

MA's quality processes

3.1 MA has established a number of activities that aim, over time, to ensure, monitor, and improve the quality of processing of Medicare claims. These quality activities rely on a combination of tasks and include:

- automating the processing of claims against the processing rules where possible (Chapter 2);
- ensuring that where claims cannot be assessed automatically MA staff are provided with a structured manual claims support process which contains a number of mechanisms to ensure consistency when manual intervention occurs;
- undertaking a manual review of a system-selected sample of claims from prior day processing (Quality Control System process);
- performing systematic follow-up reviews on classes of claims (Medicare Data Validation); and
- identify areas where the accuracy and efficiency of claims processing can be improved through a Continuous Data Quality and Improvement framework (CDQI framework).

3.2 The Medicare and Associated Government Programs Division (MAGPD), as the overall business owner for the Medicare programme within MA, has the overall responsibility for the quality of the Medicare programme. To achieve this the MAGPD relies on operational activities undertaken by other MA divisions. In particular:

- the Public/Provider Services Division (PPSD) is responsible for overall state operations, and for reviewing the accuracy of processed claims and undertaking other state office level quality-related activities and projects; and
- the Business Solutions and Operations Division (BSOD) is responsible for overseeing and coordinating the operational aspects of the implementation of the Medicare programme in each state.

Manual claims assessing support

3.3 As discussed in Chapter 1, most Medicare claims are assessed automatically by the system with no manual SO assessing intervention[58] (see paragraph 1.15 and Figure 1.3). Of the some six million claims in the sample tested by the ANAO in this audit, about 98.7 per cent were processed automatically without any SO assessing intervention[59]. Similarly, of those claims in the ANAO's sample that had been processed by SOs, most only required data entry (97.3 per cent), with the system alone assessing the claim. Where a claim cannot be automatically assessed by the system (1.3 per cent of claims in the ANAO tested sample) a SO is required to gather additional information, relating to the specific circumstances surrounding the claim in question, in order to manually apply a business rule.

3.4 MA has established a number of processes to support its staff where their intervention is required in the assessing of Medicare claims. A Medicare claim requires assessing intervention by a SO, as distinct from just data entry, when a warning or error message is triggered during the processing of a claim. These messages can require the attention of a SO irrespective of whether the claim was manually keyed into the system or entered the system electronically.[60]

3.5 The process used to process claims, showing the areas involving intervention by MA SOs, is depicted diagrammatically at Figure 3.1.

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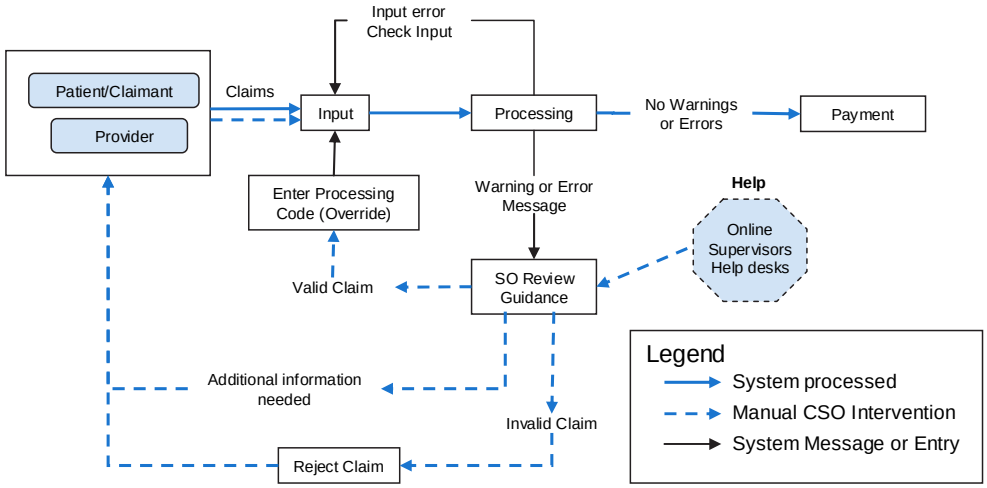
[58] Assessing intervention refers to where a SO is required to manually apply a business rule to enable the processing of the claim.

[59] This figure includes claims that were manually entered by a SO, but which required no assessing intervention.

[60] Entering the system electronically, in this context, includes electronic submission methods (for example Medicare Online and Medclaims) and where manual bulk bill vouchers are batch scanned and read electronically into the system.

Figure 3.1

Manual SO processing intervention



Source: ANAO analysis

3.6 After a claim is entered by a SO and submitted for processing, the systems based business rules are used to assess it. If a business rule error or warning condition is met, the system returns an error or warning message for SO review.

3.7 If a claim input via an automatic process results in an error or warning condition being met, the processing system will put the claim into what is known as a 'PEND' state and send it to an electronic workflow queue for manual review by a SO.

3.8 When a system message on a claim is received, the SO has the opportunity to either correct any input errors[61] that may have caused the error or, if the warning can be overridden, determine if it should be overridden based on Medicare policy as applicable to the specific claim details. Errors and warnings are generated and handled one at a time, so a claim may have one error or warning resolved, and then have another one presented for the same claim or service in a claim.

[61] Input errors can occur when claim details are incorrectly input. For example, a typographical error like inaccurately copying the Medicare card number into the system.

3.9 SOs have access to three types of support to guide them in the correct determination of claims:

- documented guidance;
- support from their supervisors; and
- helpdesk support.

3.10 The system error or warning message presented by the system may provide sufficient guidance on how to determine a claim. If this is not sufficient, a SO can access information about the Items being claimed from the online system. The online system provides the MBS description for the Medicare Item, which is set out in the regulations, and any additional 'assessing rulings'[62] that may have been created for the Item. To get more information an operator can also access the Medicare Reference Suite – a compilation of reference documents that is available via the MA Intranet. In some cases, the claimant or provider may need to provide more information (such as clarification of Item numbers) before the claim can be assessed.

3.11 If the online and Intranet support information is not adequate to assist the operator with assessing the claim, or where an operator seeks a confirmation, they can refer to their supervisor. The supervisor can then, following the same process as used by the SO, attempt to make a determination. If a supervisor is still unable to make a determination, or also seeks further confirmation, they can contact a state level Medicare assessing helpdesk. Requests to the state helpdesks can be made via telephone or email.

3.12 A state level helpdesk may escalate an issue to the National Medicare Assessing Helpdesk if unable to clarify an issue, or if system actions such as a change to the IFF may be required to resolve the matter. This can occur when an issue is unique or where a business rule will not allow a claim, which has been manually determined to be valid, to be paid. The latter may require the National Medicare Assessing Helpdesk, which is run by the National Medicare Assessing Section Policy Team, to implement a change to the configuration of a system applied business rule in the IFF. Changes may require a permanent change to the configuration of a business rule, where the rule may have been too restrictive or incorrect, or just a temporary one to allow specific claim(s) of a unique or obscure nature to be processed.

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[62] See paragraphs 2.29 to 2.33 in Chapter 2.

3.13 A helpdesk assessing query can be raised at local office, state or national levels, and can be submitted via telephone or email. Staff are able to email enquiries about assessing issues to unique email accounts which have been set up for each of the state assessing helpdesks respectively. Each of these helpdesk email accounts is reviewed only by the respective state helpdesk. In turn, the state helpdesk staff are able to raise issues with the National Medicare Assessing Helpdesk, which similarly is only viewable by the MAGPD assessing team in national office.

ANAO findings

3.14 National Medicare Assessing Helpdesk and state data quality teams advised that the emails submitted to the various state and national helpdesk email accounts are generally retained in a mailbox folder. However, there is no routine or nationally consistent procedure for retention, summarising or reporting the nature or extent of assessing queries received by the various helpdesks, and some queries received via telephone may not be documented.

3.15 The extent and nature of queries received by the helpdesks is a potential source of management information that is not currently being fully captured for use by MA. If a query is dealt with by a state level helpdesk there is no mechanism to nationally collect data about these queries. Such queries received by the different state level helpdesks could be collated to alert MA to national patterns of issues that are causing difficulties for SOs.

3.16 It is possible for issues raised with a state helpdesk to subsequently also be raised with state data quality teams. State data quality teams are members of the Continuous Data Quality Improvement (CDQI) Working Party (discussed later in the Chapter), and can therefore bring the issues to a national forum. However, this is an ad hoc mechanism that cannot provide the same insights that the systematic capture, aggregation and analysis of the queries received by the various helpdesks would provide. In addition, such issues are only raised in the CDQI Working Party meetings at the discretion of the participating members from each state and may rely on a particular attendee's own knowledge and recognition of an issue.

Recommendation No.2

3.17 The ANAO recommends that Medicare Australia develop an approach to capture, classify, and analyse the queries received by each of the state and national level Medicare assessing helpdesks, with a view to identifying a national perspective on:

(a) areas of possible ambiguity regarding the correct interpretation of Medicare business rules; and

(b) where improved guidance might be needed to better support Service Officers to consistently apply Medicare business rules and make correct determinations of Medicare benefit claims.

Medicare Australia response

3.18 Agree. Medicare Australia has built a complaints register to record and track complaints. Medicare Australia is examining the re-use of this product to capture, classify and monitor help desk enquiries. This information can then be fed into the continuous improvement model to identify where service officers might need better support or where business rules might need clarifying.

Quality control processes

3.19 MA also has two system based control mechanisms to provide assurance that SOs are applying the Medicare business rules consistently. These are:

- the Quality Control System (QCS) process; and
- the Medicare Data Validation (MDV) process (discussed in the section commencing at paragraph 3.42).

3.20 The QCS is the technology used to underpin the Medicare claims quality control process. The QCS was implemented in August 1991 and was developed to assist Medicare office managers with the managing of quality control checks for Medicare claims and enrolments transactions. The business ownership for the QCS process rests with the MAGPD, with some of the operational aspects of the process delivered by the PPSD through the state offices[63].

[63] The overall responsibility for the Medicare Programme, including quality aspects, was allocated to the MAGPD following an organisational restructure of MA in August 2007.

3.21 The QCS identifies a sample of transactions processed by a SO on the prior work day for review by their supervisor, and provides a mechanism for the results of the review to be recorded. Summary reports from QCS are also used to provide assurance to MA management as to the accuracy of the manual entry and operator intervention (assessing) of Medicare transactions.

3.22 The QCS system summary results are a key indicator used by MA management to measure the overall quality of its Medicare claims processing. A target for the accuracy of Medicare processing is endorsed annually by the Customer Services Sub Committee (CSSC) and Corporate Management Committee (CMC). Summary reports from QCS are used by MA management[64] to monitor whether this target is being achieved.

3.23 The target, or Key Performance Indicator (KPI), applying in 2006–07 was greater than or equal to 97.8 per cent accuracy for all transactions including Medicare enrolments. Over the 2006–2007 financial year, the results of the QCS process indicated that the accuracy of Medicare processing was 97.8 per cent. If the results are adjusted to remove errors that related to the enrolment of customers in Medicare, the overall processing accuracy reported for 2006–07 was 98.0 per cent. It is also important to note that it is not necessarily the case that an error in processing results in an error related to the benefit paid. For example, in the April-June quarter of 2007 only 15.9 per cent of the 1.89 per cent of transactions in which a processing error was detected through the QCS process involved an error related to the benefit paid[65].

QCS sampling methodology

3.24 On a daily basis, the QCS identifies a sample of operators for testing and selects up to seven of their prior day's transactions for review. The number of operators to be selected for testing is calculated independently for each state each day. This number is calculated by determining how many operators were working in a state on the prior day and calculating six per cent of this number. The QCS then creates a state list of 'to be sampled' operators. In creating this list, the QCS has been designed to consider how frequently an operator has been previously selected, and will not allow an operator to be selected for testing more than three times every fifty days. This frequency test ensures a

[64] QCS results are reported to Corporate Management Committee, Customer Service Sub Committee, and state and national data quality teams.

[65] Based on errors detected by QCS process for April–June 2007 quarter.

maximum frequency at which an operator will be selected, but it does not ensure a minimum frequency.

3.25 From the state list, the QCS selects the determined number of operators by stepping in equal increments[66] through the list from a random starting point. The sampling method is not designed to explicitly ensure all operators are reviewed within a given period and there is no manual monitoring of whether the system is providing coverage of all operators over time. Indeed, it is possible that an operator will not be selected at all.

3.26 The QCS system uses various factors to determine, for each operator selected for testing, which of the transactions they processed on the previous day will be reviewed. It selects preferentially in order of transaction types listed below, and with a different weighting for the various transaction types (as represented by the number in brackets):

(a) cash (2 claims);

(b) EFT (1 claim);

(c) cheque (1 claim);

(d) bulk bill (1 claim);

(e) enrolment (1 application); and

(f) manual cheque (1 claim).

3.27 The design of this 'sample' has a higher weighting on cash claims as the QCS process was initially developed to primarily replace cash audits that were undertaken by national office. Currently, reliance on the QCS process is much broader, with it being relied on as a quality control for Medicare office (branch) operations and as an assurance mechanism for MA management. When designing a quality mechanism that uses a sampling approach, such as the QCS process, the design must consider what sample size is enough to ensure the results are representative of the total population to a level of confidence adequate to support the objective of the testing.

3.28 MA's technical documentation on QCS does not indicate whether the statistical relevance of the sample process for identifying operators for QCS testing, or the size of the transaction samples reviewed, were considered in the design of the QCS. The ANAO interviewed staff from the PPSD CDQI Section

[66] Each increment is equal to six percent of the number of operators that worked in the state on the prior day.

and MAGPD Medicare Policy staff about this issue and was advised that the statistical relevance of the sample size and method was not known or monitored by MA.

3.29 If the objective of a quality control mechanism, which relies on a sampling approach, is not adequately considered during its design, the relevance of the overall results is indeterminate. If the sample size is too small, the QCS process may not provide a true indication of the accuracy of claims subjected to operator intervention/assessing during processing. Or alternatively, if the sample is larger than it needs to be, to provide a certain quality level, there would be inefficiencies due to wasted effort.

Recommendation No.3

3.30 The ANAO recommends that Medicare Australia review the Quality Control System (QCS) sampling methodology to determine if it is adequate for the functions it is used for, including whether:

(a) the basis for inferring the quality results obtained from the QCS reviews to the whole Medicare claim population is statistically sound; and

(b) the method used to select Service Officers for QCS reviews provides adequate review of Service Officers in a given time period to support its quality control function over manually processed claims.

Medicare Australia response

3.31 Agree. A review of both the statistical algorithm and the program logic is underway and relevant changes to the Quality Control System will be incorporated in 2008.

The QCS process

3.32 When a team leader[67] logs on to the QCS system each day, a list of prior day transactions is presented to review (if one or more members of their team has been selected for QCS review on that day). The team leader retrieves and reviews the physical claim documentation[68] for each of these transactions to determine if it is consistent with the details recorded in the Medicare Claims

[67] At a Medicare office the QCS team leader role is usually undertaken by the office manager. QCS reviews in state offices are undertaken by the section team leader.

[68] Physical claims documentation is held in Medicare offices for a day after processing, before it is sent into state headquarters, to allow for the QCS checks to be done against the source manual documents.

History File (MCHF). The most common type of error detected through the Quality Control (QC) checking undertaken as part of the QCS process involves the SO incorrectly interpreting the physical claim documents, with the most common error relating to the input of an incorrect patient name[69].

3.33 Errors identified during this QC checking are corrected via a Latter Day Adjustment (LDA) to the MCHF. The QC checker records the type of error found into the QCS and a summary of these results is used for overall quality reporting (as described in paragraph 3.22).

3.34 In addition, where an error is identified, the QC checker records the specific details and nature of the error onto a manual claim error report which is provided to their state office data quality team. This information is summarised by state data quality teams into state quality control registers that are collated into a National Quality Control Register (NQCR)[70]. The summary results from the QCS process are used extensively by MA management as a KPI of the overall quality of the processing of claims subjected to operator intervention/assessing.

3.35 The NQCR is maintained and reviewed nationally by the National Continuous Data Quality and Improvement (CDQI) Section and Medicare CDQI Working Party (NCDQI WP)[71]. By reviewing the national error log, it became evident during 2006 that the leading cause of errors was due to the entry of 'wrong patient' details. In turn, through the root-cause analysis undertaken by the CDQI WP in the latter part of 2006, it was established that incorrect identification by SOs of the patient to whom a claimed service had been provided could be partly attributed to the myriad of claim invoice formats used by the various providers.

3.36 The NCDQI Section then liaised with the National Corporate Services Branch to develop an eLearning module, which was deployed in March 2007, to assist SOs in identifying the 'traps' that can arise. For example, when the patient is a yet to be named newborn, and where the invoice for the service may show the patient name as 'baby of Sue Smith', the mother's name was often mistakenly used for the patient name. Similarly where parents (Medicare card holders) have similar first names or initials to their children, the cardholder may incorrectly be recorded as the patient.

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[69] Medicare Continuous Data Quality and Improvement (CDQI) Working Party minutes 27 March 2007.

[70] The state and national quality control registers commenced during 2006.

[71] The Medicare CDQI Working Party is discussed in paragraphs 3.52 to 3.58.

Aim-for-Accuracy initiative

3.37 At the inaugural meeting of the Continuous Data Quality Committee (CDQC) in December 2001[72], the decision was taken to support the continuation of a review of the QCS, which was then being conducted by the Information Quality Team[73]. A major deliverable of this review was the creation of a national QCS Operations Manual, which during its development identified differences with how the QCS testing was being undertaken around Australia. It became evident that there was a need to determine the extent and effect of these inconsistencies, and this led to the development of an initiative known as 'Aim-for-Accuracy'. The 'Aim-for-Accuracy' initiative was not intended to be an ongoing process, but rather it was implemented to identify the nature of QCS process inconsistencies from the various localities around Australia.

3.38 The 'Aim-for-Accuracy' reviews, which commenced with a South Australian pilot in January 2006, involved state data quality teams re-performing a sample of QCS checks that had previously been undertaken by local team leaders. Each 'Aim-for-Accuracy' review checked the consistency and accuracy of the manually performed QCS checks undertaken by the team leaders.

3.39 The checking of a sample of the manual QCS checks performed by team leaders is valuable because errors made by SOs may be missed by team leaders. In particular, errors made by SOs as a result of incorrect guidance provided to them by their team leader through on the job training are unlikely to be recognised by the team leader and so would go undetected by a QCS check.

3.40 As the 'Aim-for-Accuracy' reviews were progressively undertaken for each Medicare office the results were reported to the National CDQI team. In June 2006 a progress update[74] to the CSCC on the 'Aim-for-Accuracy' initiative advised reviews that had been undertaken to-date indicated that some QCS business processes were not being consistently complied with by some staff, and that feedback on the issues identified was being progressively provided to

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[72] The CDQC ceased in 2005 following a restructure within Medicare Australia.

[73] The review, which had commenced prior to the creation of the Continuous Data Quality Committee, had cross divisional support from the policy, operations, and IT divisions within MA. The Information Quality Team has since been replaced by the National Continuous Data Quality and Improvement (NCDQI) section, which is discussed later in this chapter.

[74] MA 2005–2006 CDQI Deliverables and 2006–2007 action plan.

the relevant staff. The update went on to note that fewer errors were generally being detected in the latter 'Aim-for-Accuracy' reviews, and attributed this improvement to the impact of the earlier reviews.

3.41 The effectiveness of the QCS relies on how well team leaders across the MA network undertake the manual tasks involved in conducting the QCS reviews. When these manual tasks are undertaken by a large group of individuals located across Australia, there is always a risk that over time the effectiveness of the control will be reduced, as it may become incorrectly or inconsistently applied. The ongoing effectiveness of a control such as QCS is difficult to maintain without appropriate monitoring of the operation of the control, a role that the 'Aim-for-Accuracy' reviews have temporarily provided. The review process undertaken by the 'Aim-for-Accuracy' initiative has highlighted that the quality of the QCS process would benefit from the ongoing monitoring of the Medicare team leader checks.

Medicare data validation

3.42 The Medicare data validation (MDV) process is a national office process that is conducted by NSW state office staff. The MDV process provides exception reports of the previous day's processing, which are reviewed by the NSW MDV team on a daily basis. The exception reports identify certain types of claims assessing errors and warnings[75] that have been over-ridden[76] by operators while processing particular claims.

3.43 The MDV process aims to provide assurance that information entered on a patient's history is accurate and, if necessary, to enable the records to be corrected (via a latter day adjustment (LDA)) before being archived. Until the warning is resolved it continues to be reported on the daily reports. Summary reports from the MDV process are also provided to DoHA to provide assurance that the statistical data supplied to the department about the Medicare programme is accurate. The MDV process was initiated in September 1995 at the request of DoHA.

3.44 The MDV reports identify possible anomalies where errors and warnings have been overridden, during the previous processing day, by operators in relation to the following four types of warnings (which can be either claim or enrolment related):

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[75] See paragraph 2.7.

[76] ibid.

- age anomalies[77];
- sex anomalies;
- fee anomalies[78]; and
- date of birth anomalies[79].

3.45 The anomalies are reviewed by the NSW MDV team, whom make enquiries with the state office from which the claim originated to ensure there was a valid reason for the over-ride. An anomaly caused as a result of an error is reported to the National Medicare Assessing Section for follow-up and resolution. These anomalies occur regularly, but are generally few[80] in number and with few of them being found to require an adjustment to a claim.

3.46 The ANAO reviewed the MDV reports that were generated for the two-week period that comprised the ANAO's sample for Medicare Claims History File testing[81]. The number of warnings that occurred during the second week increased five-fold compared with the first sample week. This resulted from an increase in fee anomaly warnings. A sample of these cases was reviewed by the ANAO and the warnings were found to have resulted from a difference between what was claimed and what was paid due to the cross-over to the new MBS rates. In these instances, the claims were correctly paid at amounts effective from 1 November 2006.

3.47 The MDV process conducted by the NSW state office on behalf of the national office contributes to the quality of MA claims processing by adding a timely mechanism to detect age, sex, fee or date of birth anomalies that require either confirmation or follow up action. The NSW state office staff members who perform the daily MDV checking have a good understanding of the process, which is embedded into their daily operational activities and is performed consistently. However, the MDV process is not integrated with

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77 Age and Sex anomalies are where a MBS Item applies only to patients within a certain age range or of a certain sex, and based on the customer details they are not eligible.

78 Fee anomalies usually indicate a possible underpayment or overpayment. These anomalies are usually derived fee Items.

79 Date of Birth anomalies can only be enrolment related, such as an incorrectly keyed year of birth – for example 15/12/1885 instead of 15/12/1985.

80 Based on the two week sample of claims obtained for testing there is generally less than 50 errors and/or warnings overridden daily out of approximately 700 000 transactions.

81 That is, 25 October to 7 November 2006.

other state or national quality processes such as the QCS process, the CDQI Framework (discussed in next section), or the work of state data quality Teams.

Continuous Data Quality Improvement (CDQI) Framework

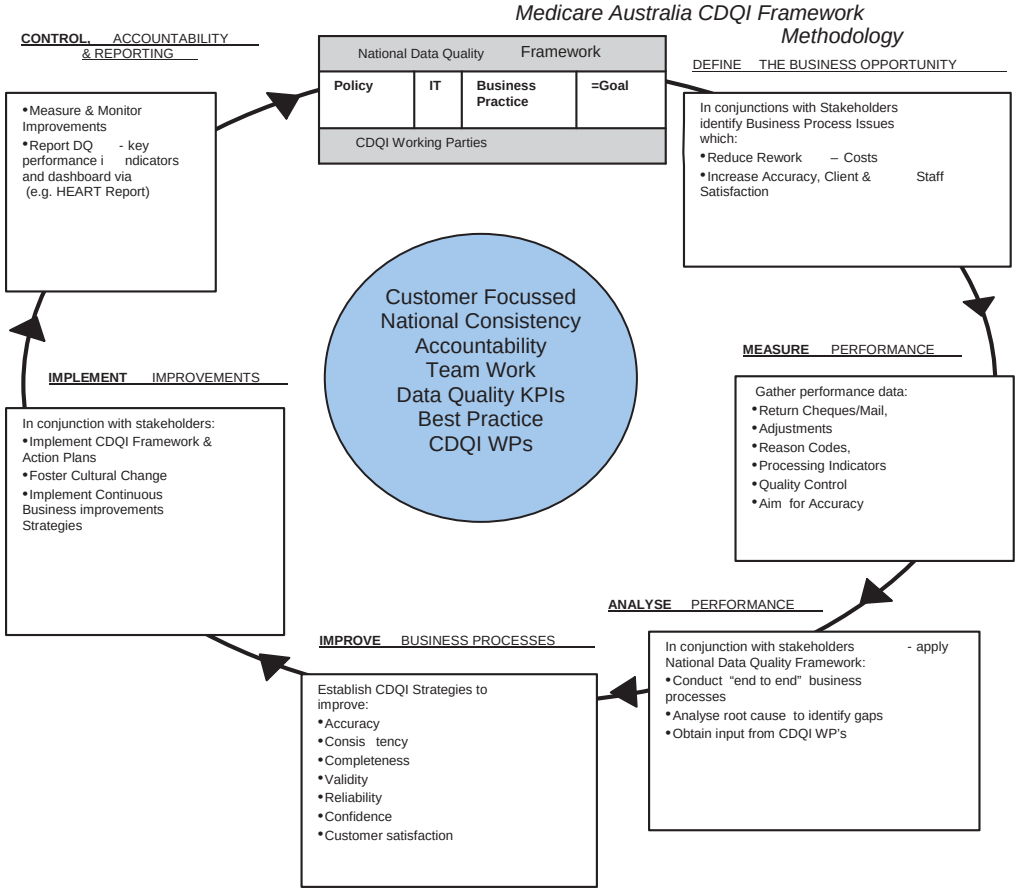
3.48 In June 2003 the MA Budget Review Committee endorsed the development of a National Continuous Data Quality and Improvement (CDQI) Framework. The Framework was developed by the National Continuous Data Quality and Improvement Section, and applies to all programmes supported by this section, including the Medicare programme.

3.49 The CDQI Framework adopted by MA is based on DMAIIC, a widely accepted approach for quality improvement to existing business processes in organisations.[82] The name of this methodology is an acronym of its stages – **D**efine, **M**onitor, **A**nalyse, **I**mprove business, **I**mplement and **C**ontrol. The stages of this process, as it has been adapted for MA, are depicted in Figure 3.2.

[82] DMAIIC is one of a number of business process improvement techniques developed by the Six Sigma Corporation.

Figure 3.2

Medicare Australia's CDQI Framework Methodology



Source: Adapted from Medicare Australia chart.

National Continuous Data Quality and Improvement Section

3.50 The Business Solutions and Operations Division's National Continuous Data Quality Improvement (NCDQI) Section provides assistance to managers and staff in national and state offices with the establishment, implementation and monitoring of projects and initiatives as part of the CDQI Framework.[83] The development of programme specific CDQI Working Parties by the NCDQI Section has also provided a forum for the stakeholder consultation that directly

[83] The NCDQI Section was initially formed to undertake CDQI projects and analysis in support of the MA CDQ Committee which existed between 2001 and 2005.

supports the effective operation of the CDQI Framework methodology in respect of each of MA's programmes. The NCDQI Section undertakes or coordinates further analysis of issues that are raised by MA management and/or by CDQI Working Parties. The analysis and co-ordination of the 'Aim-for-Accuracy' initiative (paragraphs 3.37 to 3.41) is an example of the further work that is undertaken by the NCDQI.

3.51 As a consequence of its role, the NCDQI Section has an operational level, programme-wide perspective on the quality of MA's delivery of the Medicare programme. This facilitates the identification and analysis of operational issues as they arise.

CDQI Working Parties

3.52 Much of the CDQI analysis work in MA is undertaken by cross-functional/cross-divisional working parties. CDQI Working Parties exist for each of MA's key programmes including Medicare and the Pharmaceutical Benefits Scheme. These CDQI Working Parties have members from both policy and operational groups. This audit only examined the CDQI framework from a Medicare programme perspective.

3.53 The Medicare CDQI Working Party provides the only cross-functional 'end-to-end' quality review of the Medicare programme. It provides a mechanism for policy and operational groups to; identify, measure, and analyse operational issues, and to develop a mix of policy and/or operational fixes.

3.54 Potential Medicare processing issues can first be raised by Working Party members in meetings of the group. Due to the Working Party's wide cross-divisional membership, the group can often determine during a meeting whether an issue actually exists and may also be able to identify the root cause. Where the true nature of the issue is not clear, further analysis is carried out by the Working Party members and/or the NCDQI Section for consideration at a future Working Party meeting (meetings are held monthly).

3.55 Where necessary, the outcomes of CDQI analysis can lead to the development of a business case—where the issue, its consequence (costs) and options for addressing it are provided to MA management for consideration. For example, data quality work in 2006 by the Medicare programme CDQI Working Party and the National CDQI Section identified the potential for duplicate services to be processed within a batch of bulk bill claims.

3.56 When bulk bill claims are submitted by a service provider, they are processed automatically in batches containing multiple individual services. If a potential duplicate[84] service is submitted for processing the system is designed to detect it and raise a warning, prompting an operator to then determine if it was a valid service. However, the CDQI work identified that the system would not detect potential duplicate services contained in the same batch.

3.57 The work of the Medicare CDQI Working Party and the National CDQI Section in respect of this issue resulted in two outcomes:

- a report was created to identify potential duplicate services for review by an operator; and
- an analysis of the issue and possible corrective options was provided to MA management for consideration. This analysis identified that of the 'potential duplicates' identified by the new report only 10 per cent actually were duplicate claims, which was estimated to involve some $500 000 in overpayments per annum[85].

3.58 Two system based solutions to address this issue were endorsed and were initially planned for implementation in June 2007. However, MA advises that, due to operational demands arising from new initiatives, implementation of the solutions has been postponed. An implementation date has not been set, but MA has indicated it anticipates the solutions will be implemented before the end of the 2007–08 financial year.

NCDQI projects – data cubes

3.59 The 'Aim-for-Accuracy' initiative (discussed in paragraphs 3.37 to 3.41) is a project undertaken by the NCDQI Section that has had wide visibility within Medicare. Another key project, although not as highly visible, involved the development of 'Data Quality Cubes' that are used to support quality functions within programme delivery areas, and indeed to support CDQI working party issues analysis.

3.60 Data cubes are a report generation technology that allows users to interactively generate custom built reports that would otherwise have required

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[84] A 'potential duplicate' results where two or more claims with the same; service provider, claimant, and Item, are delivered on the same day. It is possible for this to occur validly, and has been added as a control to prevent inadvertent processing of a claim twice. A SO can over-ride this warning when satisfied the service was delivered twice on the same day.

[85] Medicare Program CDQI Initiatives 2006/2007: Status Report.

an additional time investment from an IT department. They allow the data to be easily analysed based on characteristics such as dates, locations, amounts and frequency. Reports from the Data Quality Cubes are now being used to support data quality projects and initiatives undertaken by the state offices and the national office.

3.61 The development and implementation of the Provider, Item and Latter Day Adjustment (LDA) Data Quality Cubes has facilitated the identification of the root causes associated with LDA, rejection and processing trends across the various claim channels and states. Before the Data Quality Cubes were available these issues could not easily be investigated. For example, through the use of the Data Quality Cubes MA was able to better understand the nature of bulk billed LDA's, which led to a number of business improvement strategies that have resulted in a reduction of bulk bill adjustments by 66 per cent in 2006–2007.

Audit findings

3.62 The NCDQI Section has contributed significantly to the improvement of data quality within MA and to the ongoing development and operation of the CDQI Framework. This has been achieved through the identification of quality improvement opportunities, the support of national quality projects and the development and ongoing support of the CDQI Working Party process.

3.63 The CDQI Working Parties perform a critical role within the NCDQI Framework. They provide the only 'end-to-end' perspective on the operational delivery of the Medicare programme within MA. The CDQI Working Party process is well developed and brings together the necessary parties to discuss and resolve any identified data quality or integrity issues.

3.64 The ANAO observed that the NCDQI Section has undertaken the cross-divisional liaison and negotiation processes required to ensure the success of national CDQI projects. However, this has been achieved primarily through the effective informal working relationships that have been developed between the Section and other areas in the agency, rather than through a formally defined process or structure. Where a process relies on informally defined accountabilities there is a risk that changes to staff can result in a breakdown of the effectiveness of the process.

3.65 Reporting by state offices to the National CDQI Section and Working Parties occurs in regard to nationally identified quality initiatives, projects or

indicators. In addition to national quality initiatives each state office can have state specific quality indicators and/or quality projects. Such projects or indicators may arise in response to issues identified by the state specific Medicare helpdesk or the state's senior management. The outcomes of work done in the states on state specific quality indicators or projects may not be formally collated or considered nationally. There is the potential for information from state helpdesks and state quality projects to be formally reported/collated at a national level. Such a collation and review may show some trends that, at an individual state level may not appear to warrant concern but, if viewed from a overall national perspective, may warrant investigation.

3.66 The MAGPD has the overall national responsibility for the quality of Medicare claims processing within MA. At the operational level, quality relies on a number of activities that are undertaken by a number of different teams that exist within different MA divisions and across many locations. For example:

- State level helpdesk support – provided by PPSD staff from each state office;
- National helpdesk support – provided by MAGPD (Medicare Assessing Section) from national office;
- QCS process claim reviews – undertaken by staff in each of the Medicare offices, who are part of the PPSD,
- QCS results analysis – undertaken by BSOD staff who are located at the state offices;
- CDQI Working Party membership – with staff from MAGPD, PPSD and BSOD playing a role.
- MDV process – undertaken by NSW state office staff who are part of PPSD, and undertaken on behalf of MAGPD;
- State office quality initiatives – as indicted in paragraph 3.65, the state quality teams (structurally part of PPSD) within each state office can undertake unique state quality initiatives that are not necessarily in addition to national PPSD and MAGPD quality initiatives.

3.67 All of the activities undertaken by these teams contribute towards maintaining the quality of the Medicare programme by helping to control the specific quality risks that are relevant to the part of the Medicare programme

that they are responsible for. However, these activities are undertaken without considering whether the risks covered by a specific activity are already being managed, or whether the quality risks are already covered by other quality processes. Indeed these activities are undertaken in a somewhat isolated manner and without regard to each other. There is no mechanism in place to provide assurance that the overall mix of quality activities adequately manages all quality risks.

3.68 The Medicare programme would benefit from MA monitoring whether the overall coverage provided by the mix of quality activities was adequate and effective. This would address the risk that some quality risks are currently being mitigated by numerous and possibly overlapping controls and assurance mechanisms, while other quality risk areas are either going unmitigated or are only weakly controlled.

Recommendation No.4

3.69 The ANAO recommends that Medicare Australia develop a mechanism to monitor and coordinate the overall coverage provided by the various quality activities that support the Medicare programme. Such a mechanism should determine whether:

(a) the current range of quality activities provide adequate and effective assurance over the accuracy of Medicare processing;

(b) the coverage provided by the quality activities provides the most efficient mix for the Medicare programme; and

(c) there are opportunities to better integrate the various quality activities undertaken at the local, state and national level to improve their overall efficiency and effectiveness.

Medicare Australia response

3.70 Agree. Medicare Australia is progressively developing its business assurance framework for all of its programmes and will use this recommendation as an element in informing enhancements to the business assurance framework for the Medicare programme. This will include a process to identify any gaps or overlaps in the existing quality controls.

4. Information Systems Audit Analysis

This chapter analyses the results of the Information Systems Audit analysis undertaken of the systems that are used to process Medicare claims and the results of tests conducted on a sample of claims.

Information systems audit approach

4.1 The processing of Medicare claims is reliant on the use of IT systems. Reasons for this include the very large number of Medicare claim Items that are processed on a weekly basis (over 7.5 million a week[86]), the geographical distribution of MA offices and processing centres around Australia and the myriad of rules used to assess claims. The use of Information Systems (IS) audit techniques provide the means to gain assurance over a larger number of transactions than would be practical to do manually. This audit utilised two IS audit techniques to contribute towards the assessment of the accuracy of Medicare claims processing:

- data analysis using Computer Aided Audit Techniques (CAATs); and
- systems design analysis.

Use of Computer Aided Audit Techniques (CAATs)

4.2 The use of CAATs involves using a computer to automate the review of electronic files. This can include the testing of data elements within a single file or matching data elements from different files/sources.

Audit sample

4.3 A number of factors were considered in planning the use of CAATs for the audit. A sample of Medicare claims was selected that would provide as broad a coverage as possible, and in particular to ensure that there was coverage of:

- all claim channels;
- all Medicare offices;
- possible weekly cycle effects on claiming patterns; and

[86] Based on the two weeks of MCHF records obtained for this audit. This includes Items that are provided on dates outside of the selected two week period, but submitted for processing during the selected two week period.

- the higher risk associated with the annual November change to the MBS.[87]

4.4 A two week period of claims that spanned the annual November MBS change, and that were delivered and processed in the period, was chosen. This provided some 6.5 million[88] claimed Medicare Items for testing that covered all claim submission channels and Medicare offices. A two week period was considered to be long enough to include a representative population of Items being claimed[89], and not to be unduly biased by weekday versus weekend differences. By spanning the annual MBS fee change, it was also possible to test the reliability of the annual change process at the same time.[90]

Technical preparation

4.5 The analysis required the validation of MCHF records against the CD and IFF databases and a DoHA MBS dataset. This required the migration of these various databases from their sources into an ANAO environment that would allow their cross comparison and reconciliation against each other.

4.6 The platform chosen for the analysis was a mid-range version of the mainframe database technology[91] used for the CD and IFF, and its choice assisted in the export and import of data between the MA mainframe and the ANAO servers. It also enabled a better understanding of the source database environment to be obtained, which assisted in the Systems Design Analysis component of the Information Systems audit. The tables from the CD and IFF were recreated for analysis into a single ANAO database, with a different schema[92] for each original database[93]. A diagrammatic overview of this is provided in Figure 4.1.

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87 The computer processing and storage capacity resource demands that would be required to cross-match and test the selected Medicare Claims History File (MCHF) records against the Consumer Directory (CD) database, the IFF and the MBS, was also considered.

88 6 499 841.

89 2402 distinct Items were in the MCHF sample out of a possible 5140.

90 The size of the source data files that were required for this analysis totalled 57 GB.

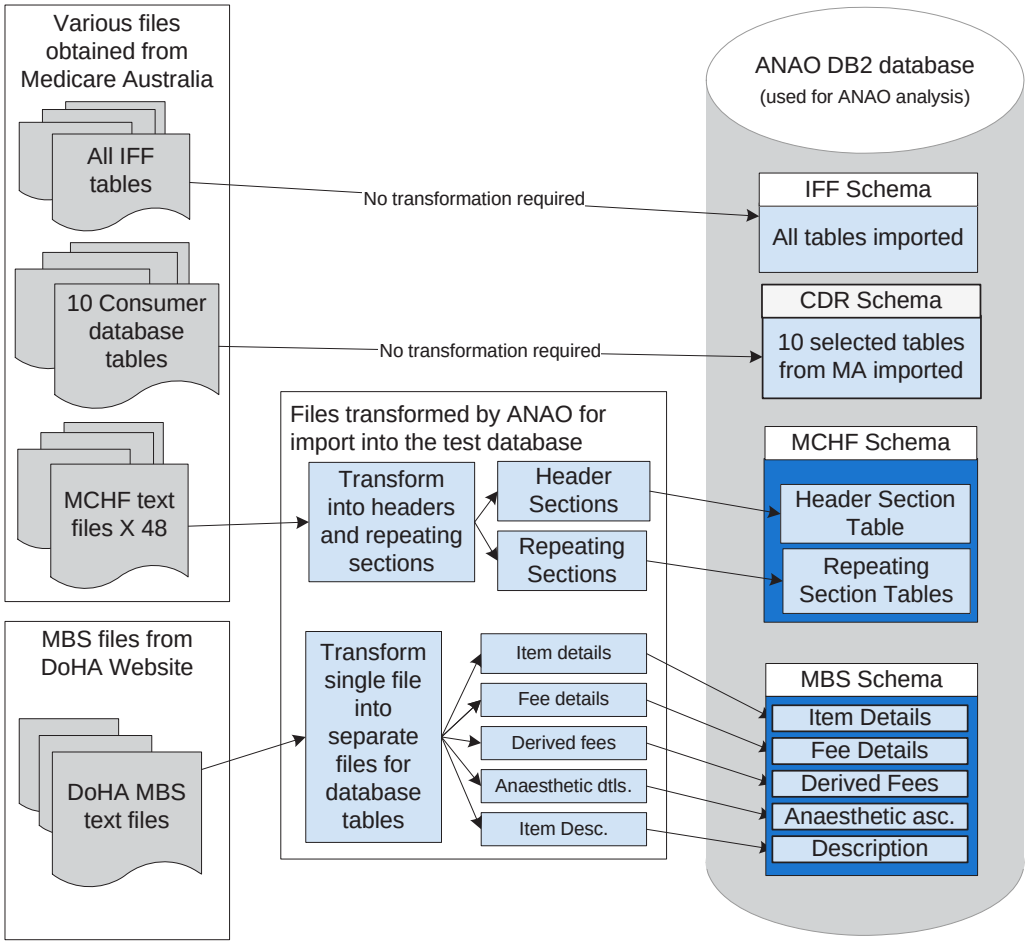
91 An IBM DB2 UDB database.

92 A schema is a database mechanism for segmenting a single database into logical sections.

93 Only several key tables from the CD were obtained. These did not contain claimant names or addresses.

Figure 4.1

Data transformation and load overview



Source: ANAO

4.7 The IFF and CD were built using a contemporary relational database design and as a result the data obtained required no structural transformation before importing it into the ANAO's test database. The MCHF uses an older VSAM (Virtual Storage Access Method) file format, which has been used since the system's inception. It uses a variable length 'flat file' format. In essence, this format has a header claim section and a repeating claimed Items section, the length of which depends on the number of Items claimed in a single claim. The preparation of the MCHF data for analysis required the separation of the repeating Item parts of each claim into a separate database table, while retaining key information that could be used to associate it with a specific

claim. This transformed data was imported into the ANAO analysis database as several distinct tables in a discrete database schema.

4.8 The MBS file from DoHA was also a simple text file with a defined data layout. This also required some transformation, parsing the single file into five separate but related database tables in another unique database schema.

4.9 Analysis was then undertaken using Structured Query Language (SQL), which is a standard programming language that is specifically designed for querying databases.

Validity of patients

4.10 The ANAO tested the validity of patients[94] in respect of whom claims had been submitted during the two week test period. This was tested using a series of SQL queries performed against the database that was populated by the ANAO with data collected from MA (paragraphs 4.5,4.6). This was done by running a cross check between tables in the database to determine if all patients in the claims existed in the CD, and that they were valid at the time of the claim processing. It was found that all claims in the sample of claims obtained for this audit were made by valid patients.

Validity of Items

4.11 When a claim is processed the MBS scheduled fee and the benefit paid are recorded in the MCHF. The validity of the Item and the correctness of the Item benefit amount were tested by confirming the existence of the Item and that the scheduled fee recorded in the MCHF sample matched the scheduled fee set out in the DoHA electronic version of the MBS. It should be noted that the benefit paid does not necessarily match the scheduled fee. This can occur for two main reasons: broad category levels and inter-Item business rules.

4.12 The MBS broad category rules specify a different proportion of the scheduled fee be paid depending on how the service was delivered. In essence, the categorisation of these levels is based on whether an Item is:

- delivered to 'admitted' hospital patients: 75 per cent of the scheduled fee;

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[94] As indicated in paragraph 1.24 the validity of claimants was not tested during this audit. For the purpose of this audit a claimant was considered valid if their enrolment in the Medicare programme was current as recorded in the MA Consumer Directory database.

- resulting from non-referred attendances by General Practitioners to non-admitted hospital patients: 100 per cent of the scheduled fee; and
- other professional services: 85 per cent of the scheduled fee.

4.13 There are also a number of inter-Item business rules that exist, where the calculation of the actual benefit amount can vary, depending on a number of factors that include:

- the amount paid for a service;
- the amount paid for services in a period by a claimant; and
- the nature of Items that are claimed in a single service.

4.14 Where a percentage of the scheduled fee is payable by Medicare (determined as in paragraph 4.12), the claimant pays the remaining amount or 'gap amount'. This gap amount has been capped in certain circumstances. For example, for an MBS Item that falls into the 'other professional services' category, the benefit payable is broadly defined as 85 per cent of the schedule fee. However, the 'fee gap' has been capped at $65.20[95]. This means that the 85 per cent benefit level will apply for all fees up to $434.65, after which, benefits are calculated at the schedule fee less $65.20. This figure is adjusted annually.

4.15 Medicare Safety Net (MSN) initiatives also adjust the amount that is payable to a claimant or family group annually when specified threshold amounts are reached. Details of the different initiatives, the threshold amounts that relate to them and the benefits available to claimants are set out in Table 4.1.

[95] Based on the November 2007 MBS.

Table 4.1

Medicare Safety Net thresholds[#]

Initiative type	Threshold	Who is it for?	How is it calculated?	Benefit to claimants
Gap	$358.90	All Medicare card holders	Based on gap amount	100% of Schedule fee*
Concession & Family Tax Benefit (Part A)	$519.50	Commonwealth concession holders & families eligible for FTB(A)	Out-of-pocket expenses	80% of out-of-pocket expenses*
General	$1039.00	All Medicare card holders	Out-of-pocket expenses	80% of out-of-pocket*

[#] Thresholds for 2007
* For out-of-hospital services

Source: Medicare Australia website – <www.medicare.gov.au>

4.16 Other more complex business rules affect the benefit payable amount depending on whether certain Items are delivered together. For example, the benefit payable for pathology Items is calculated only after considering 'episode coning rules' and 'multiple service rules'. Episode coning rules restrict the benefit to the sum of the highest three fee amounts, with some exceptions, whereas multiple services rules restrict the amount paid where the test is repeated more than once for a single episode.

4.17 ANAO's testing focussed on whether the benefit amount was calculated using the correct scheduled fee rather than testing whether the correct benefit amount was paid. This is because it would have been impractical in the context of the audit to attempt to test the benefit amounts for such a large sample of transactions where to do so would have required complex cross-claim and cross-Item analysis.

4.18 The validity of the scheduled fee used for each MBS Item was tested against the ANAO's MBS database created from the DoHA data. All Items in the claim sample were found to be valid Items. All scheduled fees, with the exception of one, were also found to match the DoHA MBS. The one exception was an error resulting from an incomplete annual update to the IFF. This was discussed in paragraph 2.22.

Design review

Systems design review

4.19 Systems design analysis involves the review of the IT systems supporting the business process being examined, by identifying its major processing stages, data flows and data stores.

4.20 Two specific techniques were used in the examination of MA's computer systems documentation relating to the Medicare Programme:

- flowchart verification – the analysis of data flows, logic and sequence through computer program modules. The flowcharts used for the audit were a synthesis of existing Medicare documentation and the result of audit enquiries; and
- computer program design checking – this allows for the logic and design of a computer program and supporting databases to be assessed.

4.21 Both of these techniques can reveal underlying design limitations and possible logic errors. In practice, the Systems Design Review is performed concurrently, and in support of, CAATs planning. During CAATs planning the appropriateness of test data, and their source, needs to be validated and confirmed. These techniques were used to gain an understanding of the Medicare processing environment described below.

4.22 The systems supporting the delivery of the Medicare programme have undergone maintenance, modification and replacement since their original development. The current processing of Medicare claims relies on legacy systems using VSAM file based datastores and contemporary relational DB2 databases.

Item Fee File

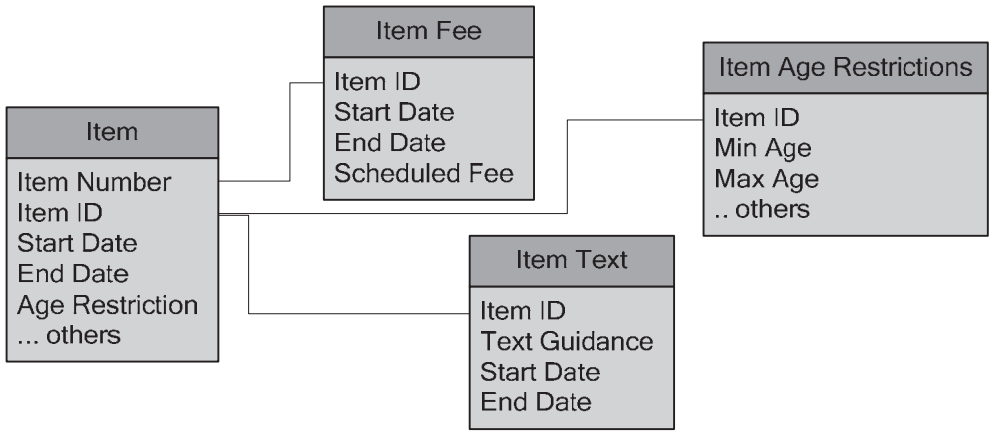
4.23 The IFF is used by MA to store information about MBS Items and the rules that govern how they can be validly claimed. It is based on an electronic version of the MBS provided by DoHA in a flat file format. This DoHA version of the MBS does not define the associations or restrictions between Items; these are added manually by the Medicare Assessing Section. The IFF also contains assessing rules for Items (as described in Chapter 2) that can be used by SOs and assessing teams when determining a claim.

4.24 The IFF database is a relational database. In a relational database, information is generally separated into segments of data that are likely to change at the same time. This allows data to be spread across a number of database structures known as tables, with updates only being made to the table containing the changed information.

4.25 So, for example, in the IFF, an Item is created in a core table that has the Item number and its creation date, but does not have the fee amounts. The fees can change annually, and so each year a new record in a fees table is created for each Item and includes the period that it covers (a condition). Creating a new entry into a database table, rather than editing existing entries, allows prior period fees, and potentially future fees, to co-exist in the database, should they be needed for calculations or reference. This is particularly required when new fees are introduced, but services that were provided in a prior period still need to be processed at the old fee rates. The IFF, with only a sub-set of tables and fields, is used to illustrate a relational database structure in Figure 4.2.

Figure 4.2

Representation of part of the Item Fee File



Source: Based on tables and fields in the MA IFF database[96].

[96] Note: To assist readers, actual table and field names have not been used in this figure, as their purpose is not readily discernable from the actual names, instead names indicative of their purpose have been substituted for illustration purposes only.

4.26 Each Item is listed in the Items table and is potentially supported by one or many other tables. These other tables are used to define other business rules or conditions that can apply to an Item. Examples include age, sex, incompatible associated Items[97] and validity dates.

4.27 The use of this contemporary relational database design allows changing or additional rules associated with an Item to be relatively easily added. This includes system applied rules and the recording of 'assessing rule guidance' to assist SOs in determining certain claims.[98]

Medicare Claims History File (MCHF)

4.28 When a Medicare claim is processed some of the details of the claim, and from the processing of the claim, are recorded in the Medicare Claims History File (MCHF). The MCHF is primarily a record of claimant history, which is used in part as data for the processing of business rules where prior claimed Items and claimant history need to be considered. The MCHF is however also the sole record of some claim processing details, and therefore becomes part of the record MA has about how and why a Medicare claim was paid or rejected.

MCHF Format

4.29 As noted in paragraph 4.7, the MCHF uses a file format known as a VSAM file. First released by IBM in 1973, VSAM is a file management system used on IBM mainframe computers. Many older, large-scale data management systems use VSAM, although computer software developments over the past three decades have produced a range of more versatile data management systems.

4.30 The VSAM file format is a 'flat file format', which contains all of its information in a single table. This differs from the contemporary relational databases used by the IFF and the CD, where the data is spread over a number of tables. The MCHF is actually a collection of 48 flat file databases, where each file stores information from a geographical region. The spreading across 48 files was done due to an historical limitation of the VSAM technology that limited the size of any one file to 4 GB. The VSAM flat file format is not easily

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[97] A Medicare benefit for some Items may not be payable when delivered at the same time as other Items being claimed. This can be due to a preclusion specified by legislation or as due to a determination by a Medicare Medical Advisor. For example, Item 39137 has been identified legislatively not to be delivered with Items 39130, 39138 or 39139.

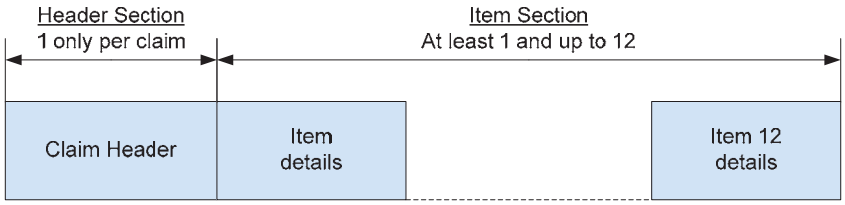
[98] See paragraphs 2.26 to 2.33.

expanded once implemented and, for that reason, during the design of the MCHF layout a number of spaces were included in each section for possible future uses. Since the implementation of the MCHF record format some of the 'spare' space has been used.

4.31 The MCHF design stores information in two parts – a header part that contains details about the claim and an Item part that contains one or more repeating Item details section. Each claim has a single claim header section and up to 12 Items sections. This is represented in Figure 4.3.

Figure 4.3

Flat file design of the Medicare Claims History File



Source: ANAO analysis of MA documentation.

Audit Findings

Claim detail section

4.32 The claim header contains details that are unique to the claim and includes the claimant identification number, the Medicare card number used for claim and the processing date and time. In addition to the claimant details fields there are a number of other fields that record system details, such as the operator number and the source office number.

4.33 The MCHF record was not primarily intended to be a record of the claim but rather a record of claimant history (refer to paragraph 4.28). Not all claim transaction details are recorded in the MCHF, for example who the claimant was. On many occasions the patient and the claimant are the same, but it is possible for the patient and the claimant to be different (for example, parents and guardians of patients). Section 20(1) of the *Health Insurance Act 1973* stipulates that a Medicare benefit is payable to anyone who has incurred an expense for the delivery of a professional service covered by the MBS. This permits the payment to non-patients as long as the patient was an eligible person under the Act.

4.34 Historically, details of the actual person making a Medicare claim were not entered into the system during the processing of a claim, and if needed the actual claimant details could be found by retrieving the manual claimant claim form. However, with the introduction Medicare Online in 2002 came the advent of electronic paperless claims and a need to electronically capture claimant details. While the capturing of claimant details became possible for electronic claims, manually processed claims still relied on the manual claim form as the record of claimant. An enhancement to the manual processing system, as of March 2007, now provides the ability to electronically capture the claimant details during the processing of manual claims. The storage of this additional electronic data required the use of a new contemporary database to supplement the legacy VSAM MCHF files.

Items section

4.35 A single claim can contain multiple Items that were delivered by one service provider or several providers, on the same day or on different occasions. For this reason a claim can have multiple Items as discussed in paragraph 4.31.

4.36 The Item sections contain details associated with each Item claimed. This includes the Item being claimed, the scheduled fee and the actual amount paid. This section also contains details about who provided the service. Other fields contain details used in the processing of a claim, such as the field used to store the amount by which an Item benefit was increased due to a Medicare Safety Net adjustment.[99]

4.37 As with the claim header, as discussed in paragraph 4.29, the Item section is primarily intended to be a record of the claimant history and not to be the record of the claim transaction. The Items section is however used to record a number of transaction details that are not recorded elsewhere and the MCHF therefore becomes part of the record MA has of the processing of the Medicare claim Item.

[99] The impact of the Medicare Safety Net on some claims is discussed in paragraph 4.15.

4.38 One particularly important set of details recorded in the Items section of a MCHF record is what, if any, processing indicator (PI) or reason (RSN) over-ride code was used during the processing of a claim. As outlined in paragraph 2.7 these codes and indicators can be manually entered by a SO to allow the processing of a claim Item where the system applied business rules alone cannot, and reflect the reason for the payment or rejection of the claim. Some indicators or codes are also system generated.

4.39 The PI and RSN codes form part of the electronic audit trail[100] of the administrative decision points relating to assessment of a claim. The value and need for audit trails in automated systems was recognised by the Administrative Review Council in their report *Automated Assistance in Administrative Decision Making, Report No.46*, as detailed below.

> "Expert systems' ability to provide an audit trail of the administrative decision-making processes they are involved in is important to the administrative law values of transparency, fairness and efficiency."

4.40 The fixed length of the MCHF file format limits the extent to which repeating features can be added to each MCHF record, such as recording multiple PI or RSN Codes that may be used during the processing of a claim. As a consequence where more than one PI or RSN code is used during the processing of an Item, only the last of each is recorded. These codes are intended to allow a record of what decisions were made, if any, during the processing of a claim and why. As a result where more than one PI or RSN code is used during the processing of an Item a full record of the reasons for the decision on the claim is not being maintained in the system.

[100] An audit trail allows for the review of what activity was done and why. They are used in both manual and system based processes. An audit trail is a record of details that can be relied upon to reconstruct the nature and extent of a prior activity.

4.41 However, MA advised it is only in very few instances that more than one PI or RSN code is required in the manual processing of a claimed Item and that, where necessary, the agency is able to manually re-create the decision-making process. MA further advised that the system changes that would be required to enable the system to automatically record multiple PI or RSN codes that may be used during the processing of an Item would involve significant costs. MA also has work currently under way which it expects will make it even less likely that more than one PI or RSN code will be required to process an Item.[101]

Ian McPhee
Auditor-General

Canberra ACT
23 January 2008

[101] Advised by MA 4 December 2007.

Index

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Audit Report No.1 2007–08
Acquisition of the ABRAMS Main Battle Tank
Department of Defence
Defence Materiel Organisation

Audit Report No.2 2007–08
Electronic Travel Authority Follow-up Audit
Department of Immigration and Citizenship

Audit Report No.3 2007–08
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Performance Audit of the Regional Partnerships Programme:
Volume 1–Summary and Recommendations
Volume 2–Main Report
Volume 3–Project Case Studies
Department of Transport and Regional Services

Audit Report No.15 2007–08
Administration of Australian Business Number Registrations: Follow-up Audit
Australian Taxation Office

Audit Report No.16 2007–08
Data Integrity in the Child Support Agency
Child Support Agency
Department of Human Services

Audit Report No.17 2007–08
Management of the IT Refresh Programme
Centrelink

Audit Report No.18 2007–08
Audits of the Financial Statements of Australian Government Entities for the Period Ended 30 June 2007

Audit Report No.19 2007–08
Administration of the Automotive Competitiveness and Investment Scheme
Department of Innovation, Industry, Science and Research
Australian Customs Service

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