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Health Information Systems in the Private Health Sector

Abstract

This chapter provides an overview of health information systems in the private health sector from a legislative and operational perspective, highlighting the duality of the South African health care system, which is also reflected in the health information system.

The chapter explores data sources, data quality and collection processes as well as the minimum data set, which focuses primarily on access, utilisation, cost and quality of health care services. The role of health care providers, intermediaries such as data transmission companies, medical schemes and administrators in the flow of information in the private sector is also outlined.

The Risk Equalisation Fund process highlights the implications of legislative reform on health information systems specifically, data requirements, data collection processes, and system requirements. Inherent in any health information system is the need to protect personal health information and this is dealt with in the context of confidentiality focusing on the adequacy of legislation, and processes and practices of different stakeholders with regards to personal health information.

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Introduction

A health information system is an integral component of any health care system. It provides the context within which data collection, processing, analysis and reporting of health information takes place and facilitates the development of appropriate health care indicators for monitoring and evaluating the performance of the health care system. In South Africa the emphasis of the health information system development and implementation strategy has largely been on the public sector rather than on the private sector as per government strategy on health information systems. As a consequence, health information systems in both sectors have developed in different directions, with private sector health information systems focusing more on commercial aspects such as reimbursement and development of clinical and managed care interventions.

The focus of this chapter is restricted to the health information system in the private health sector. The emphasis is on the medical schemes environment, which is the major component of the private health sector and how it interconnects with the public sector.

The chapter provides an overview of the information flow across various stakeholders including: health care providers; data transmission companies; managed care organisations; medical schemes; and administrators. It also highlights developments in the standardisation of coding structures, including the ICD-10. At the same time it delves into the implications of the intended Risk Equalisation Fund (REF) on health information needs and the extent of integration of the public and private health information systems. In addition, the chapter explores the adequacy of legislation, processes and practices relating to confidentiality of patient health information.

Box 1: Policy, strategy and legislation relevant to health information systems' development

Policy and strategy

1997: White Paper on Healthcare Reform[1]

This document proposes the following:

- Formation of a committee to facilitate the development of a national strategy for implementation of a comprehensive National Health Information System for South Africa.
- Integration of private health sector information systems into the National Health Information System for South Africa.
- Adoption of ICD-10 as a diagnosis coding standard for the country (public and private sector).

1999: Health Sector Strategic Framework: 1999-2004[2]

- This document highlights the objective of strengthening the health information system as part of the strategic framework, including the adoption of a common procedural code and a common data dictionary in the public and private health sectors.

2004: Strategic Priorities for the National Health System: 2004-2009[3]

- As part of the strategic priorities on planning, budgeting and monitoring and evaluation, the document highlights as a key activity, the strengthening of the use of health information systems.

Legislation

1998: Medical Schemes Act (Act 131 of 1998)[4]

In terms of section 7, the Council for Medical Schemes shall: (b) control and coordinate the functioning of medical schemes in a manner that is complementary with the national health policy, (c) make recommendations to the Minister on the criteria for measurement of quality and outcomes of the relevant health services provided for by medical schemes, and such other services as the Council may determine from time to time, and (e) collect and disseminate information about private health care.

2004: National Health Act (Act 61 of 2003)[5]

In terms of section 74(1) the Act stipulates that the national Department of Health facilitate and coordinate the establishment, implementation and maintenance by provincial department, district health councils, municipalities and the private health sector of the information systems at national, provincial and local level in order to create a comprehensive national health information system.

Section 74(2) of the Act stipulates that the Minister may, for the purpose of creating, maintaining or adapting databases within the national health information system contemplated in subsection (1), prescribe categories or kinds of data for submission and collection and the manner and format in which and by whom the data must be compiled or collated and must be submitted to the national department.

Overview of legislation on health information

The Department of Health's (DoH) policy on health information systems' development and implementation in the private health sector is outlined chronologically in health care strategic documents and legislation (see Box 1).

The Regulations to support the National Health Act are still to be finalised. It is envisaged that the finalisation of these Regulations will strengthen the implementation of health information systems and provide clarity on the health information flow between public and private health sectors.

The policies, strategies and legislations listed in Box 1 strongly outline the broader national health information system strategy for the public health sector, however, there is a need to further clarify the role of the private health sector in the country's health information system. It is important that the parameters for the integration of the public and private health sector be defined in order that a unified health information system be developed. This is critical particularly in light of the current situation which has resulted in the fragmentation of the health information system in the private health sector.

Despite the limitation raised above, a number of legislative provisions that have an impact on health information management throughout the health sector have been introduced over time. The impact of these legislative provisions on health information is primarily in the key areas of data collection, transmission, storage, analysis, use and confidentiality of personal health information.

Health information

Health information is described differently in different settings around the world. Currently, the general consensus is that health information is information about:

"... all resources, organisations and actors that are involved in the regulation, financing, and provision of actions whose primary intent is to protect, promote or improve health".[6]

Health information is essential for planning and decision making at all levels of the health care spectrum. The health care spectrum as it relates to the context of this chapter includes diverse groups such as consumers, beneficiaries of medical schemes, data transmission companies, administrators, managed care organisations, regulatory authorities and government.

Types of health information

There are many role players with different health information needs in the private health sector. This has resulted in the increased demand for the quantity and complexity of health information required.

In terms of national health information system policies, information gathered can be classified into four broad categories.[7]

- **Health status information:** morbidity and mortality, births, deaths, injuries and disease burden
- **Health related information:** demographic, socio-economic, residential and other related information
- **Health service information:** utilisation of services taking into account the level, rate and intensity, and quality of care
- **Health management information:** administrative, financial and other management related information

The major difference in the type of information collected by various role players is with respect to the degree of reliability, level of detail, and diversity of topics. The type of health information collected in the private health sector is not necessarily similar to that collected in the public health sector.

Essential (minimum) data set

In the private health sector, the Council for Medical Schemes (CMS) has developed an essential (minimum) data set, which includes information that all medical schemes must collect. Information in the minimum data set covers three primary areas: access; cost; and utilisation of health care services in addition to the demographic characteristics of beneficiaries. The development of a minimum data set was a collaborative effort which took into account the data sources and requirements of the various role players in the industry and entailed the identification of appropriate indicators, data collection tools, data transmission and processing systems.[8] The National Indicator Data Set (NIDS) which has been implemented in the public health sector focuses primarily on the collection of routine data and information from primary health care and hospital services. There is a need for the public and private sector minimum data sets to be reviewed for possible integration into a single comprehensive data set.

The benefits of a minimum data set are that it standardises data collection procedures and processes across the health information system and allows for the monitoring and

evaluation of policies, programmes and performance of the health care system. Further, it facilitates and ensures improvements in the quality and comparability of data.

Processes for collection of health information

The process for the collection of data on health care also differs according to the various role players. The typical processes for the collection of primary and secondary data include:

Primary data

- Patient information: collected during consultation with health care providers for medical records.
- Medical scheme beneficiary information: collected through application forms and includes demographic information, socio-economic information, medical and administrative information.
- Provider information:
  - collected through the Health Professions Council of South Africa (HPCSA) and includes data on registered health care practitioners.
  - collected through the practice code numbering system (PCNS) and contains demographic, professional and business information on health care providers, which allows for an assessment of the distribution of private health care providers in the country.
- Regular surveys and censuses conducted by various public and private sector stakeholders.

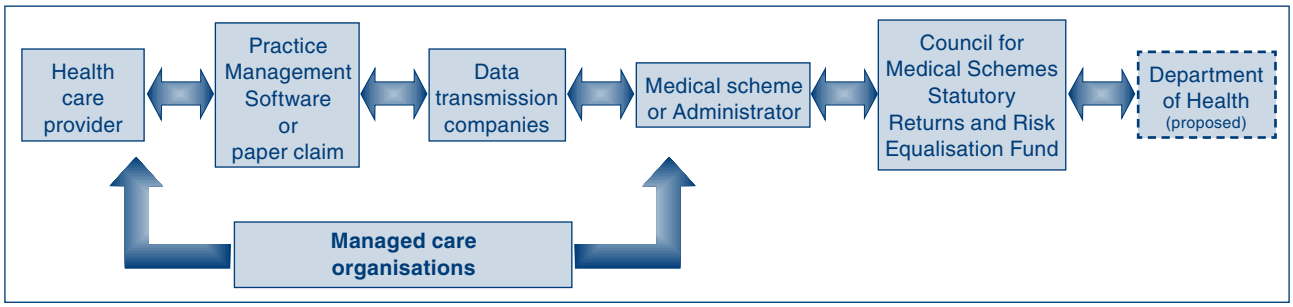
Secondary data

- Clinical information: collected through claims submitted by health care providers to medical schemes for access to benefits and reimbursement; claims usually contain clinical, financial and administrative information. Clinical data are also collected through managed care entities.
- Quarterly and annual statutory returns to the CMS: aggregate information on expenditure on health care providers, cost of health care, utilisation of services, demographic profiles, and related financial and administrative information.
- Demographic and risk factor data for the REF: clinical, demographic and financial information is collected from medical schemes.

Transmission of health information

Large volumes of data are transmitted by the private sector on a daily basis. Data generated at the health care provider level is transmitted to a medical scheme for reimbursement, either electronically through practice management software systems or by paper claims. Figure 1 shows the data transmission flow from the health care provider to the medical scheme. The figure also highlights a proposal on the future end-point of all health information collected by the different role players in the public and private sector, which is an accessible centralised data base of all health information to be run and managed by the DoH. The perceived benefit of this data base would be to provide information on all health care matters in the country.

Figure 1: Health information flow in the private health sector



Source: Flow diagram developed by authors.

When a claim is transmitted electronically from a health care provider to a data transmission company, it is adequately assessed for conformance to the requirements (accuracy and completeness) of individual medical schemes. This process also allows for an assessment of the adequacy of benefits entitlement of the medical scheme beneficiary. There is however a standard legislative format that regulates the type and content of information in a claim. This standard is outlined in Regulation 5 of the Medical Schemes Act (Act 131 of 1998) and defines the minimum set of administrative, clinical and cost information that is required for a claim to be reimbursable by a medical scheme.

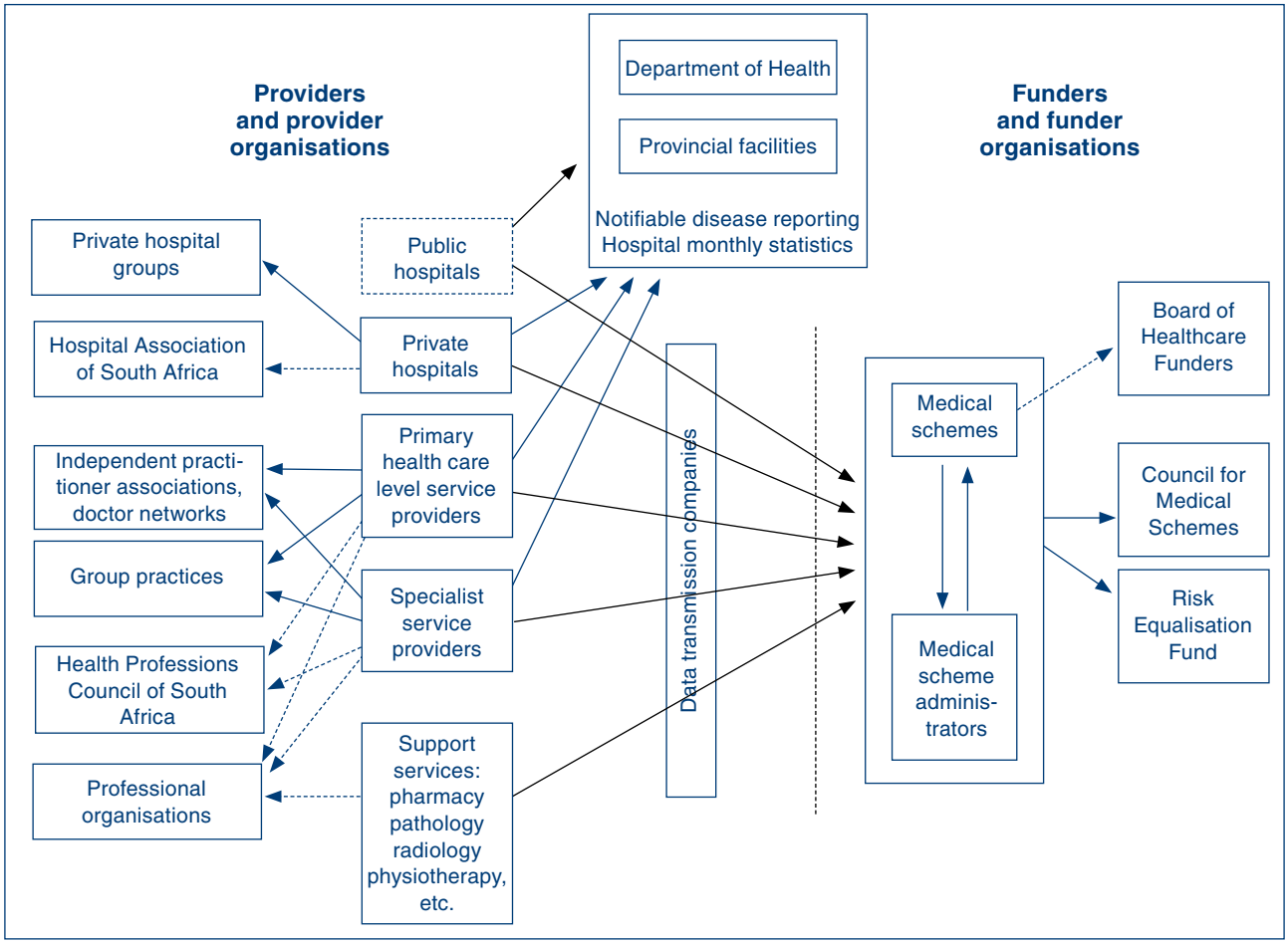
In turn, medical schemes transmit data electronically for statutory return purposes to the CMS. The statutory return process automatically validates information from the scheme before it is analysed and prepared for reporting through quarterly or annual reports. The CMS is required to report to the DoH, via the CMS annual report and the annual report on the REF. However, at present there is no defined feedback or reporting process from the DoH to the medical schemes.

Quality of health information

The quality of health information is critical for analytical and proper decision making by all role players. Therefore it is imperative to ensure that appropriate standards of data quality are maintained. This requires a balance between the production of good quality data and the costs (administrative, financial and personnel) associated with producing such data.

Currently, there are no government or independent agencies with clearly defined and well coordinated strategies for assessing the quality of health information in the private health sector. Possible solutions that have been suggested by stakeholders in this environment are the need to develop health information standards that can be applied across the sector, development of guidelines for the collection of various types of health information and training of personnel.[9]

Figure 2: Flow of data to support patient care in the private health sector



Source: Flow diagram developed by Hanmer, 2007.

The role of intermediaries

Intermediaries play an important role in the collection, transmission and quality of health information in the private sector. Figure 2 illustrates the flow of personal health information in the private health care environment. The specific role played by each intermediary in the flow of health information is outlined.

Health care providers

Health care providers gather health information from patients, which include clinical, demographic, administrative and financial information. This information is submitted to medical schemes primarily for purposes of reimbursement. Clinical information is also shared with other health care providers who form part of the health care team (through referral processes), for purposes of continuity of care. According to the National Health Act all patients receiving treatment at a health establishment must receive a discharge report (written or verbal). The Regulations to the Act are to be finalised soon.

Health care providers such as hospital groups, pathologists and radiologists have their own health information systems which operate independently from other sub-systems within the private health information system. The fragmented nature of the various sub-systems has the potential of limiting the ability to develop a fully integrated private health information system to provide comprehensive information on relevant health care measures.

Practice Management Software companies

Practice Management Software (PMS) enables health care providers to collect, store, retrieve and transmit information electronically to medical schemes and administrators. Most health care providers use different practice management systems with different capabilities as there is currently no standardised format.

Data transmission companies

Data transmission companies provide a platform for transmission of claims from health care providers to medical schemes and administrators. Some of the data transmission companies provide online real-time management of health care transactions. They play a crucial role in conducting data quality checks on all incoming data and facilitating the application of benefit entitlements and limitations on medical scheme beneficiaries.

Managed care organisations

The conduct of managed care entities in the medical scheme environment is authorised by the CMS through an accreditation process.[10] All managed care entities in the country are legally obliged to operate through contracts with medical schemes.

Generally, managed care entities contribute to the efficiency and effectiveness of medical schemes by focusing on the clinical and financial risk management of the scheme. This is achieved through intervention tools such as protocols, formularies, provider networks and disease management programmes. There are different managed care models ranging from disease managed programmes to integrated delivery models.

All managed care organisations require clinical and financial information in order to conduct their business effectively. In turn, they are required to provide accurate, reliable and appropriate information to the medical schemes so that their performance can be assessed. Information management, data integrity, confidentiality and security are critical aspects of this process.

Medical schemes

In the execution of their responsibilities, medical schemes collect personal health information from a beneficiary, which is processed, stored and transmitted as an individual beneficiary record. This single record, together with records of other members or beneficiaries of the medical scheme, constitutes a data base of clinical, financial and administrative information. When combined with data from other medical schemes, the aggregated data provide a broad perspective of the health status of the medical scheme population and expenditure on services provided to beneficiaries. Medical schemes are legally required to submit statutory returns consisting of aggregate data to the CMS for purposes of monitoring and evaluating the performance of medical schemes.

Medical scheme administrators

Medical scheme administrators perform administrative functions on behalf of medical schemes in terms of a contract or agreement between the two parties. The conduct of all administrators is authorised by the CMS through an accreditation process which ensures that a common standard of administrative competency is maintained.[11]

Administrators play an important role in the health information system. Not only do they collect, store and process health information, but they also ensure that confidentiality of personal health information is maintained directly within the administrator or through downstream contracting with data transmission companies or any other party.

Standardisation of health information

Over time, there has been significant improvement in data collection processes in the private health sector. However, standardisation of data remains a challenge resulting in poor comparability and lack of integration of data into the broader health information system. The information needed to monitor access, quality and equity is still inadequate.

The process of standardisation of data principles and practices in the medical schemes industry received major impetus in 2001 with the formation of a Committee on Standardisation of Data and Billing Practices under the auspices of the CMS. This Committee sought to address some of the concerns raised by health care providers, medical schemes and administrators with regards to standardisation of data and billing practices, as required in terms of the Medical Schemes Act. The Committee recommended that standards be developed for the following key aspects: diagnosis coding; procedure coding; coding of pharmaceuticals; electronic messaging; and confidentiality. This was followed by other processes such as the National Task Team on ICD-10 implementation.

Private Health Information Standards Committee

The Private Health Information Standards Committee (PHISC) is an established organisation of private health sector stakeholders concerned with health information standards in South Africa. The principal objective of the PHISC is to communicate and reach consensus on implementation guidelines, to monitor national health information standards in the private health industry and to achieve this with maximum cooperation with government and other interested parties.[12]

As there are currently no clearly defined and well coordinated strategies for the development and implementation of a private health information system in South Africa, the PHISC has occasionally functioned as a forum for overseeing the broad health information needs of the private health sector. Members of the PHISC are actively involved in the ICD-10 implementation Task Team.

The current activities of the PHISC reflect the following key issues that need to be addressed in the private health care environment.

- Diagnosis and procedure coding
- Pharmaceutical codes
- Message standards
- Privacy and confidentiality
- Standardised claim forms

Diagnosis coding

The International Classification of Diseases (ICD), which is published and maintained by the World Health Organization (WHO) is designed to promote international comparability in the collection, processing, classification, and presentation of morbidity and mortality statistics.[13] The ICD-10 (the tenth revision of ICD) was accepted as the national standard for diagnosis coding for both the public and private health sectors in 1995. However, the process of national implementation of this standard in South Africa commenced at the beginning of 2004 with the formation of a National Task Team on ICD-10 implementation. A broad consultative process was established that included the CMS, the DoH and a variety of industry stakeholders. The primary purpose was to develop an implementation plan for the ICD-10 that was applicable to both the public and private health sectors. The benefit of this initiative has been the standardisation of diagnosis in the industry, improved clinical and risk management by schemes, speedy and appropriate reimbursement of providers, improved access to benefits by medical scheme beneficiaries and improved quality of morbidity data.

In South Africa, the ICD-10 coding system was formally introduced in the private health sector in July 2005 and is currently used by all medical schemes and administrators, health care providers, managed care organisations and other parties in the public and private sectors for the clas-

sification of diseases (i.e. morbidity coding). Statistics South Africa (StatsSA) also uses ICD-10 for the classification of causes of death (i.e. mortality coding).

The implementation of the ICD-10 coding system is being conducted in phases on an ongoing basis. Currently, the average level of compliance with inclusion of a valid ICD-10 code in claims to medical schemes ranges from 70% to 95% as determined through compliance statistics submitted to the National Task Team on ICD-10 by medical schemes.

Procedure codes

Procedure codes are numeric or alphanumeric codes that are used to identify medical services, treatment and procedures performed by health care providers. These codes provide a standardised method for describing medical, surgical and diagnostic services and facilitate communication between health care providers, medical schemes and medical scheme beneficiaries. Several procedure codes are currently in use in the private sector and the most common are discussed below.

National standard for procedure codes

The need for national standards for procedure codes to support both patient records and accurate billing (especially at hospital level) have been identified in both the public and private sectors. A further consideration is the need for procedure coding as the basis for allocation of patient interventions to 'casemix' groups, which reflect the resources required to treat particular health problems (e.g. Diagnosis Related Groups). The Board of Healthcare Funders (BHF) has commissioned a study of potential procedure coding systems for use in the private health care sector which could provide a useful basis for future decision making on this critical issue.[14]

National Health Reference Price List

The National Health Reference Price List (NHRPL) is a schedule of health service procedure codes administered by the DoH and linked to reference prices.[15] It provides a standardised billing structure for use in the medical schemes industry that enables health care providers and medical schemes to independently set benefits and prices matching their own affordability constraints and cost structures.

Common Procedural Terminology / Complete CPT for South Africa codes

Common Procedural Terminology (CPT) is a set of codes developed by the American Medical Association (AMA), which describes and facilitates reporting of medical services and procedures. The primary purpose of the CPT is to provide a uniform language that accurately describes medical, surgical, and diagnostic services.[16]

The South African version of the CPT is known as the Complete CPT for South Africa (CCSA) and is based on the original CPT codes together with South African specific codes. The CCSA incorporates the Resource Based Relative Value Scale (RBRVS) which provides a guideline for reimbursement of doctors' services. The South African Medical Association (SAMA) is the custodian of CPT codes in South Africa. Although not a national standard, CCSA is widely used as the basis of contracts between providers and medical schemes. The challenge in rolling out the CPT on a wider basis including, the public sector, is its proprietary nature.

Uniform Patient Fee Schedule

The Uniform Patient Fee Schedule (UPFS) supports national policy on the levying of standardised fees for services rendered to all patients at provincial health establishments. The UPFS was developed to provide a schedule of fees, which takes account of the limited resources for patient billing at many public hospitals. It is used by medical schemes as the basis for reimbursement of public health facilities for services rendered to medical scheme beneficiaries. The UPFS is also used for billing of individuals accessing public health sector facilities.[17]

Pharmaceutical codes

The public health sector uses a different pharmaceutical coding structure compared to the private health sector and to date no uniform coding structure for pharmaceutical products exists in the country. The National Pharmaceutical Product Index (NAPPI) codes administered by Medikredit are unique identifiers of pharmaceutical and surgical products and are widely used in the private health care industry.[18]

The public sector currently utilises the National Stock Number (NSN), which is a unique identifier of pharmaceutical products i.e. medicines (ethicals and generics), surgicals, injectables and syringes. In addition to the NSN, the public sector also uses the European Article Numbering-Uniform Code Council (EAN-UCC) pharmaceutical coding system (version

13) for tracking pharmaceutical products between suppliers and hospitals.

Work has commenced through the PHISC to develop a national uniform pharmaceutical coding system for implementation in the public and private sectors. A crosswalk between the NAPPI and the NSN codes for pharmaceuticals has been developed by Medikredit under the auspices of PHISC and in consultation with the DoH, as the first phase towards standardisation of pharmaceutical codes for use in the public and private sectors. The NAPPI-NSN crosswalk has been made available in the public domain.[a] There are many other pharmaceutical codes that are used in the private sector such as the Anatomical Therapeutic Codes (ATC), maintained by the WHO, Generic Product Identifier (GPI) maintained by Medispan and the Monthly Index of Medical Specialities (MIMS) which is a data base of prescription drugs and prescription medicine guidelines published by Johncom Media Investments Limited.

Electronic messaging

In order to exchange information between computer applications from health care providers to data transmission companies, from data transmission companies to medical schemes and from medical schemes to regulatory authorities, the applications need to speak a common 'language'. This implies that applications must understand the message, the data elements or fields, the schema and the choreography of the data in the exchange process.

There are numerous message formats in use in the South African private health care environment. The public sector faces similar challenges, as the information systems of districts, provinces and the national DoH are different. The challenge of dealing with the myriad electronic message formats as well as paper claims introduces additional costs and complexity into the health care system.

In response to this challenge, the well-established and widely-used standard Electronic Data Interchange For Administration Commerce and Transport (EDIFACT)[b] messages for claims have been developed and maintained by the PHISC. The PHISC has recently (April 2007) commenced work on the development of standard message claims in Extensible Mark-up Language (XML) format, based on the standardised requirements defined for the content of claims.

a The NAPPI-NSN crosswalk is available on the Medikredit website at https://www.medikredit.co.za/Nappi/NAPPI_Services.htm

b Standard for Electronic Data Interchange for Administration, Commerce and Transport of the International Standards Organisation (ISO).

The PHISC and the National Health Information System of South Africa (NHIS / SA) Committee were tasked by role players with the responsibility to investigate, propose and ratify a subset of Health Level Seven (HL7) messages that would be implemented in South Africa. HL7 is an application standard, which refers to the top level (7th) of the communication model of the International Organisation for Standardisation (ISO) and allows for the interconnection of systems.

In practice, HL7 (version 2) is used to a limited extent in the private health sector for the exchange of data between health information systems, other than for reimbursement claims. All health information systems procured for use in the public health care sector are required to be HL7-compliant. Many factors need to be taken into consideration when adopting HL7 for use in South Africa including the version of HL7 to be implemented.[19]

Risk Equalisation Fund

Risk equalisation is a mechanism to ensure that everyone pays the same price for Prescribed Minimum Benefits (PMBs), and not a price determined by age and health status. The primary purpose for the introduction of the REF in the medical schemes environment is to eliminate occurrences where some schemes design benefits in a way that attracts younger and healthier people, thus leaving other medical schemes with older and less healthy people who tend to incur higher medical costs for the same set of PMBs.[20]

REF is in the shadow period where testing and analysis of shadow returns from medical schemes are conducted on an ongoing basis, to assist the finalisation of the development of guidelines for the identification of beneficiaries with REF risk factors, in accordance with the REF entry and verification criteria.[21] At the same time, the process awaits passage of enabling legislation which forms part of the amendments to the Medical Schemes Act, of 1998 and the finalisation of the verification criteria and standardisation of data quality. It is anticipated that REF will improve fairness through reducing incentives to schemes to risk rate and encourage cost-effective purchasing of health care benefits.

In order to effectively implement and manage the REF process, crucial pieces of health information are required.

Data requirements

The data requirements for the REF shadow process[c] include demographic information, prevalence and count[d] of specific risk factors, for each option and for each month in every medical scheme. These data requirements include:

- Demographic information
- Number of beneficiaries by age and gender
- Risk factors
- 25 chronic conditions listed as PMBs
- HIV
- Maternity

It is envisaged that data will in future be collected at a beneficiary level and held in a central REF registry. All medical schemes will then be required to notify REF of beneficiaries who have joined or left the scheme, or those whose details have changed. In addition to this, medical schemes will also be required to notify REF of the chronic disease status of beneficiaries during a predetermined period.

Data collection processes

During the REF shadow process, data for the REF is collected monthly in a standardised electronic format in the form of a summarised prevalence and count table. Once the registry is established, data for the REF will be submitted in a standardised format at beneficiary level. The registry will then produce prevalence and count reports in a consistent manner for every scheme. All the data for every record submitted by a medical scheme to the REF will be validated by a rules engine for integrity before it is stored in the registry.

Information technology systems

The submission of data to the REF is an automated, web-based process, which allows for the collection of data for the REF in a centralised registry. The registry collects both beneficiary information (drawn from the medical schemes membership data) and data on risk factors (derived from the medical schemes claims data). There are multiple schemes with different information technology systems that are poorly standardised and integrated. The REF process accommodates these data formats by allowing for the submission of data either through text or Microsoft Excel files and the REF system converts the submitted data into REF-compliant data files.

c The shadow process is being used to prepare medical schemes and the Council for Medical Scheme for the eventual REF process. Data have been gathered in a limited form since January 2005 for the shadow process.

d Beneficiaries with multiple chronic disease are allocated to the column with the highest cost disease so that each beneficiary appears only once in the data.

Integration of public and private sector health information systems

In 1994, the DoH established the NHIS / SA Committee to facilitate the development of a national strategy for the implementation of a comprehensive National Health Information System for South Africa. One of the objectives of the NHIS / SA Committee was to develop a single National Health Information System with sub-systems at different levels, which would ensure the collection of data at appropriate platforms.

In the private sector, the CMS through the Medical Schemes Act was allocated the responsibility of collecting and disseminating information on private health care. Ideally, there should have been greater collaboration between the DoH and other role players in facilitating the integration of different information sub-systems in the public and private sectors.

There is limited integration of data and data flow between health information systems in the private and public sectors. A 2002 survey of key informants from the public and private health care sectors raised the concern relating to the development of silos of information in different sectors of the South African health care system, including the public and private sectors, other sectors such as non-governmental organisations (NGOs), traditional medicine and health research sectors.[22] Anecdotal evidence in 2007 from the authors' experience of both public and private sectors is that there is little exchange of health data between the sectors.

Further results from the 2002 study indicated strong consensus on the need for common standards for data across the public and private sectors to enable effective exchange of data. While important gains have been made, such as the national implementation of ICD-10, a comprehensive national health data dictionary has not yet been developed and implemented. Components of a national health data dictionary and the essential processes for maintaining it, do exist for the District Health Information System (DHIS), which is used nationally to report facility-level data at district, provincial and national levels.[23]

In terms of legislation and regulation, health care providers in both the public and private sectors are required to report on notifiable diseases. However, the extent to which this occurs is not clear. For public and private sector hospitals, there is an agreed data set which should be reported monthly.[24]

The development and implementation of a National Electronic Health Record for South Africa (eHR.ZA) could provide an important and effective mechanism for integration of data for patient care across the public and private health care sectors. With the necessary attention to confidentiality requirements, such combined data have the potential to be used for reporting and planning for health services at provincial and national levels across the entire health care sector. The tender for the eHR.ZA indicated that this would be a national record, rather than being restricted to the public sector.[25] However, as this tender has not yet been awarded, it is doubtful that it will actually be implemented.

Confidentiality of personal health information

Overview of legislation

There are various pieces of legislation which have direct bearing on the protection of personal health information. They place a responsibility on all role players in the public and private health care environment to ensure that confidentiality of personal health information is maintained at all times. In terms of section 14 of the Constitution, every person has the right to privacy, which includes the right to have his or her information kept confidential.

In line with the Constitution, the National Health Act places an obligation on health care providers or establishments to protect health records and emphasises confidentiality of information and informed consent for disclosure of information for public health purposes. The process of development of Regulations to support this provision of the National Health Act will commence soon. Section 57 of the Medical Schemes Act places obligation on the board of trustees of medical schemes to take reasonable steps to protect beneficiary information. This extends to all contracting arrangements including managed care organisations, administrators and data transmission companies.

In addition to these legislative provisions, health care providers are also obliged under the respective legislative provisions and ethical rules of their regulatory authorities to ensure anonymity of personal health information and to obtain informed consent for disclosure of confidential information.

Other legislative provisions that have a bearing on personal health information are the Electronic Communications Act (Act 36 of 2005) and the Promotion of Access to Information Act (Act 54 of 2002), which emphasises the protection of personal information and the need for informed consent for the disclosure of information.[26,27]

Informed consent

When beneficiaries consult with health care providers, prior to treatment, the provider is required to secure informed consent from the patient. In addition, regulatory authorities such as the HPCSA, require health care providers to secure informed consent to transmit information to medical schemes and for referral purposes to health care providers in the continuum of care.

Privacy

Privacy in the health care environment refers to the refusal by a consumer to allow a health care provider to either disclose or transmit information to any other party not directly involved in the health care delivery process.

When beneficiaries join a medical scheme, they enter into a contract with the scheme and when health care services are accessed the scheme reimburses the health care provider in terms of a predetermined basket of services. However, beneficiaries and their dependants may refuse to have part or all of their personal health information submitted to their medical scheme. This impacts on the medical schemes' ability to accurately assign benefits for services rendered and to reimburse the provider. This action is inconsistent with legislative provisions of the Medical Schemes Act, which stipulates the minimum set of information required for honouring a claim from a health care provider.

Confidentiality

Confidentiality is protected where an individual / patient agrees to have personal health information disclosed only to authorised personnel for the execution of specific functions or responsibilities. In the private health sector environment, this entails the submission of a claim by a health care provider to a medical scheme for purposes of accessing member benefits and requesting reimbursement for services

rendered by the health care provider. The issue of confidentiality is covered in detail in the confidentiality document prepared by the National Task Team on ICD-10 implementation, which is currently available from the CMS web site.[e,28]

Security

Security of information relates to the preservation of confidentiality, integrity and availability of data. Medical schemes, administrators and managed care organisations are required by law to ensure appropriate security of personal health information. This forms an essential part of the accreditation process and legal obligation is placed on the board of trustees of medical schemes to ensure that beneficiary information is protected at all times.

Protection on the use of personal health information

The current legislative framework for the protection of patient health information is adequate according to an investigation on confidentiality conducted by the National Task Team on ICD-10 implementation. The challenge however, remains in ensuring that all parties comply with the requirements of legislative provisions, particularly, as it relates to privacy, confidentiality, security and integrity of personal health information across the entire health information flow process.

Discussion

This review of health information systems policy, legislation and practice has confirmed that no formal, integrated health information system to support patient care across the private health care sector exists in South Africa. Effective information systems to support reimbursement for services by health care practitioners, hospital services and support services such as pharmacy and radiology cover a large proportion of private health care services and could provide the core of integrated patient records in the future.

There have been significant driving forces since 1994 which have affected the development of health information systems and the quality of health information in the private sector.

Key drivers / role players

The National Health Act makes specific reference to the need for a national health information system, which includes both the public and private sectors and therefore provides the framework for health information systems in the private sector. Other clauses in the Act that refer to the rights of patients to be informed of their treatment and the need for the confidentiality of health information to be preserved could have a significant impact on information management in the private sector. The Regulations of the National Health Act however, are still to be finalised.

In addition to the National Health Act, the Medical Schemes Act has provided key impetus for the standardisation of health information in the private sector. The requirements for medical scheme claims have prompted significant consultation and decisions in relation to the implementation of ICD-10 as the national diagnosis coding standard. In this respect, the work of the ICD-10 Implementation Task Team, jointly convened by the DoH and the CMS and involving relevant stakeholder groups has provided a model for meaningful and useful cooperation between the public and private sectors on health information issues. More broadly, the PHISC has provided an important forum for debate and consensus on health information standards issues for the private sector with the overall aim of identifying appropriate common standards applicable to both the public and private sectors.

Key challenges

A key challenge facing health information management in the private sector is that there is greater emphasis on reimbursement and risk management than on support for patient care. As a result, there are currently few efforts geared specifically towards the development of information systems (manual and / or electronic) to support effective patient care across multiple settings.

Despite clear references to the need for integration between public and private sectors, the legislation and policy do not provide clear guidelines for the flow and content of health information systems in the private health care sector in South Africa. While major efforts are underway in the public sector to improve the integration between health services and vital registration (births and deaths registration) there are no equivalent initiatives in the private sector.

e CMS website: http//www.medicalschemes.com

In order for a comprehensive National Health Information System to be realised a dedicated national health information standards body needs to be established to take responsibility for the mammoth task of coordinating the public and private health information systems. Such a body should be inclusive and representative of all stakeholders to ensure that the multiple needs for health information and supporting information systems are taken into account. The successful operation of the National ICD-10 Implementation Task Team, which includes a wide range of participants from the public and private sectors, demonstrates the feasibility of such an approach. The National Health Act provides enabling legislation to move forward in this direction. The proposed body would not only be responsible for defining the framework for the development and implementation of health information systems, but would also assume the responsibility of ensuring the development of appropriate health information standards for the country.

Various stakeholders have voiced concerns about the maintenance of confidentiality of patient data in relation to the implementation of ICD-10 coding on medical scheme claims. In response, both the PHISC and the ICD-10 Implementation Task Team have initiated extensive work on guidelines for the maintenance of confidentiality.

Skilled human resources remain a key challenge in efforts to improve information management and information quality in the private health care sector. Following the national implementation of ICD-10 there has been revived and extended understanding of the need for skilled diagnosis coders to ensure accurate coding. Extensive efforts have been undertaken towards the formalisation of coding training and the development of career paths for coders (nosologists), of whom there are currently very few in South Africa.

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