

Managing the Transition to Digital Imaging: Analysis of Responses to the Discussion Paper

Introduction

The introduction of digital imaging technology, which is occurring across the Australian healthcare system, is fundamentally changing the use, transfer, and storage of diagnostic images. This is leading to a number of benefits including the better management and easier manipulation of large datasets, improved productivity, and environmental and cost benefits.

The trend, however, to provide fewer than all of the images or to provide images on portable media devices (CDs, DVDs, SD cards, flash drives) is causing a number of problems. These can be broadly grouped into two categories: firstly the operation of portable media devices, and secondly the principles that surround the provision of, and access to images and the responsibilities of providers and referrers.

On 29 February 2008, the Department released a discussion paper titled 'Managing the Transition to Digital Imaging', which examined the second of those categories and whether the *Health Insurance Act 1973* (the Act) should be updated to reflect changing technology. Over 50 key stakeholder groups were emailed the discussion paper, from which 33 submissions were received by the Department. The Australian Commission on Safety and Quality in Health Care and the Australian Society of Anaesthetists declined the opportunity to comment. The list of organisations that provided submissions is at [Attachment A](#).

Submissions were received from a range of groups including medical professional organisations, peak bodies, radiologists, diagnostic imaging equipment vendors and a key health informatics organisation. This provided sound representation from providers, referrers and users of diagnostic images.

This paper discusses and analyses the responses to the discussion paper through three principles: the provision of images, the quality and format of images, and the storage of images. The results of submissions to the Discussion Paper lead to the conclusion that a Code of Practice, agreed to by all key stakeholder groups and based on the principles described, should be developed and implemented before legislative changes are considered.

Discussion

Image Provision

In order to assess the impact the problems digital imaging was having on the provision of images, the Department first posed the question:

Are problems with the provision of digital images common place? If so, what are the issues compromising the quality of diagnostic imaging services in terms of treatment of patients, costs and repetition of examinations?

The majority of submissions (64%) to the discussion paper agreed that issues of image provision are commonplace. Respondents were particularly concerned with the operation of portable media, especially CDs, and the lack of access to or knowledge of what is appropriate equipment. Other problems described could be grouped into the following areas of concern

- Access to and/or cost of appropriate software/hardware to view and manipulate images in all clinical areas;
 - Especially the transfer of costs from image providers to referring practitioners;
- Provision of diagnostic quality images;
 - Including the requirement for all images to be provided
- Referring practitioners require training to manipulate and manage digital images;
- Lack of consultation by providers when migrating to digital imaging regarding access to and required format of images;
- Issues of corporate IT security systems and the function of CDs across operating systems;
- Storage and ownership of images
 - Including responsibility of on-referral

Although respondents generally agreed that there are problems because of the transition to digital imaging, there was much less agreement on the second question.

Should the legislation be clarified so that a copy of the images, relevant to the diagnostic report, be provided to requesting (and treating) medical practitioners for a Medicare benefit to be payable?

Of the 33 respondents, 16 (48%) agreed that legislation should be clarified, while 14 (42%) disagreed with the proposition, the remainder did not indicate a position. The comments that both sides provided to support their relative position were largely unanimous, that a diagnostic imaging service comprises both the radiologist's expert opinion and the relevant images. Respondents did raise, however, a number of concerns regarding the proposal, particularly: the inability of Medicare Australia to ensure compliance, the complexity of such legislative changes, and that a voluntary Code of Practice has not yet been attempted.

The final question on image provision, posed by the discussion paper was:

Should a Medicare benefit be payable contingent on the provision of additional copies of digital images to treating practitioners on referral within a reasonable time period?

Respondents were evenly divided on this question (16 yes; 15 no; 2 no position). The position of those that responded positively was that, for the period that an image is stored, additional copies of images should be able to be obtained at a cost. While those that responded negatively commented that legislation would be too onerous and this principle would be better handled through a Code of Practice. These two arguments are not mutually exclusive and can be addressed in a Code of Practice. Most significantly, as the Medicare benefit is paid shortly after a service is provided, it is unfeasible to ensure compliance with this proposal.

Image Quality and Format

Access to images of diagnostic quality was regarded by respondents as a significant issue in digital imaging. The discussion paper asked the following question:

Should the provision of 'diagnostic quality' images be a requirement for a Medicare benefit to be payable?

Respondents were evenly spread in response to this question, 14 agreed while 16 disagreed. The comments provided however were largely unanimous; diagnostic quality images should be provided to

all referrers of diagnostic imaging services. It was noted that while some practitioners do not always need to see images or diagnostic quality images, they should always be available. The DICOM standard was largely agreed as being of diagnostic quality and it was noted that the requirements of the equipment upon which the images are read has an impact on diagnostic quality.

There was an overwhelmingly positive response (82%) to the first part of the question:

Should digital images be provided in a format accessible and viewable by the requesting (or treating) medical practitioner? Should this be a requirement for a Medicare benefit to be payable?

Respondents, however, were equally divided (14 yes; 15 no; 4 no response) on the second part of the question. Ten respondents (30%) believed that, while images should be provided in an accessible and viewable format, the proposition that an accessible and viewable image be provided, should not be incorporated into legislation. These respondents described that a Code of Practice would sufficiently address the problem, in combination with market forces, given the rapid change in technology. Images should conform to a standard format and requesting (and treating) medical practitioners should be appropriately equipped to receive images conforming to that standard.

Image Storage

The transition to digital imaging is changing the way images are stored as it is often the case that the patient is no longer the most appropriate person to store images. Images that are provided on CDs are not of archival quality and should never contain the only copy of images. Other alternatives include electronic storage on an external hard drive or computer system. The question regarding who should store images, and for how long, was posed in the discussion paper:

What role, if any, should requesting and treating medical practitioners have in storage and transmission of copies of digital images?

Unlike the previous question this proposal received almost unanimous rejection (79%), with only four respondents supporting the proposal. The most common response was that the image provider should store the images rather than the requesting medical practitioner. This view was confirmed in the next question:

Do you agree that storage of digital images by the diagnostic imaging service provider be a requirement for payment of a Medicare benefit? If so, for how long?

It was generally regarded by respondents (61%) that the image provider should store images; those of a dissenting opinion either agreed with the previous question or suggested patient archiving of images. Imaging providers should store images as they have already invested in infrastructure that can be expanded to meet storage requirements, as opposed to other medical practitioners who would be required to make significant changes to their practices to store images. The most common storage period was 18 months, as suggested in the discussion paper, however a number of respondents suggested state and territory health records guidelines or standardising between the two.

The discussion paper asked under what clinical contexts should digital images be retained for longer than the proposed 18 months. Respondents recommended extended storage periods for chronic conditions (including neurological conditions), paediatrics, oncology and a range of other clinical

indications. Other options included at the determination of the profession or at request of the clinician by arrangement with the diagnostic imaging service.

Analysis

Responses to the discussion paper indicate that the transition to digital imaging is leading to a number of problems with the provision of images. These issues include the operation of portable media devices, the principles that surround the provision of, and access to images, and the responsibilities of providers and referrers of diagnostic imaging services.

As presented in the discussion section, the majority of responses to the questions posed were evenly split indicating that while stakeholders believe the principles discussed are important that it would be inappropriate to include them as a requirement in the Act. Furthermore the Act describes a particular relationship between the requester of diagnostic imaging services and the imaging provider. It does not detail how the service is performed or how the report is provided to the requester. Including the principles, raised in the discussion paper, in the Act would represent an extension of the scope of Medicare into the provision of diagnostic imaging services, which must be considered carefully.

While it is inappropriate, at this time, to make legislative changes with respect to digital imaging, it is essential that the stakeholders involved in digital imaging drive agreement on a plan of action to resolve the problems described in this paper. This, at a minimum, should include an agreed Code of Practice.

Although the legislation does not explicitly state that images must be provided as part of a diagnostic imaging service, it is reasonable to assume that, as the legislation was written under a film based paradigm where images are routinely provided, that a diagnostic imaging service includes the provision of images relevant to the report. This principle should be further stated and refined in a Code of Practice that describes the rights and responsibilities of both the requester and provider of diagnostic imaging services. The rights and responsibilities of treating medical practitioners, that have been referred patients with imaging, should also be defined to resolve the issue of accessing images.

A Code of Practice should state that images must be provided in a quality comparable to that read by the radiologist. The DICOM standard is generally regarded as meeting this requirement. Images that are not of diagnostic quality may be included; however they should not solely accompany the report. This incurs a responsibility on both the image providers and the referring practitioner, who must read the images provided on appropriate equipment. There was overwhelming support for the provision of images in a format accessible by the requesting practitioner; this may include the provision of film, portable media devices or both. A group representing key stakeholder organisations should consider how these principles are included in a Code of Practice.

It is not feasible for patients to continue to store digital images, due to the non-archival nature of all portable media devices. Respondents generally agreed with the principle of the image provider storing digital images for at least 18 months. A Code of Practice should consider the storage of all images or only those relevant to the report and the process for extended storage of those images.

Conclusion

In summary, it is not currently appropriate to change the Act in response to the demands of the transition to digital imaging. As the issues remain, and are predicted to increase, the stakeholders involved in digital imaging should drive agreement on a plan of action to resolve the problems described in this paper. This, at a minimum, should include an agreed Code of Practice.

A Code of Practice, developed and agreed to by major stakeholders, would need to consider as key principles:

- That a diagnostic imaging service includes the provision of a report and relevant images representative of the results of the report.
- That images should be, at a minimum, provided in a quality comparable to that used by the radiologist to make the report.
- That images are provided in a format accessible by the requesting practitioner.
- That images should be stored for a minimum period of 18 months.

In addition a Code of Practice should consider specifying:

- The rights and responsibilities of requesters, providers of diagnostic imaging as well as the on-referred treating medical practitioner.
- A method to ensure the images are provided in a format accessible by the requesting practitioner.
- The conditions and procedure by which images are determined for extended storage, including consideration of patient informed consent.

The final question in the discussion paper invited respondents to suggest actions to improve the ability of medical practitioners to view and use digital images. The most common actions, by a significant margin are:

- The development of a Code of Practice detailing the principles of digital image provision and the related standards.
- Education of requesting medical practitioners on how to use and manipulate digital images and guidance on the equipment needed to view images. This may be most appropriately provided by the medical practitioner's professional organisation.
- Medical practitioners that request diagnostic imaging need to invest in technology, with the guidance from their professional organisation, to view digital images. Depending on their requirements this may include generic or specific hardware and an image viewer.

Another common action that was recommended by respondents is ensuring access to appropriate equipment in all areas of need. Although it was suggested that the Commonwealth provide assistance to medical practitioners to purchase equipment, this is not feasible at the present due to budgetary constraints.

This paper recommends that the stakeholders involved in digital imaging should agree on a plan of action to resolve the issues of digital imaging. The responses to the discussion paper show a clear understanding of the issues of digital imaging and general agreement on its principles. If key stakeholder groups work together to resolve the issues raised the transition to digital imaging can proceed smoothly.

Attachment A

Submissions to the Diagnostic Imaging Discussion Paper
The Children's Hospital at Westmead
Australian & Newland Association of Oral and Maxillofacial Surgeons
Medicare Australia
Royal Australasian College of Surgeons
Australian Orthopaedic Association
QLD Health – CaSS
Breastscreen WA
ANZSVS - Dr Peter Woodruff
Swithin Song
Tasmania Health
IHE Australia
Orange Base Hospital
Commonwealth Breastscreen section
Greater Southern Area Health Service
Dr Hugh Calvey
Australian and New Zealand Association of Physicians in Nuclear Medicine
Medinexus
Australian Diagnostic Imaging Association
NSW Health
Denys Wynn - North Coast Area Health Service
Royal Australian and New Zealand College of Radiologists
AGFA
Spine Society
Breastscreen Vic
Dr Fraser Brown
AMA
Breastscreen SA
ACT Health
Royal Australasian College of Physicians
Sydney South West Area Health Service
SA Health
Australian Institute of Radiography
Australian Society for Ultrasound in Medicine