

# **The Royal Australian and New Zealand College of Radiologists**

## **Quality Use of Diagnostic Imaging Program**

*CS.4.ii CONSUMER INFORMATION STRATEGIES –  
Phases 3 and 4*

### **Final Report**

4 December 2007



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**NOTE:**

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## Title of Project

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CS4.ii CONSUMER INFORMATION STRATEGIES – PHASES 3 & 4

## Researchers

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  - Ms Sharon Ride (Federation of Ethnic Communities' Council of Australia)
  - Mr Keith Williams (Consumers' Health Forum)
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## Scope of Report

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This Final Report is provided as required in Schedule 4 of the Contract between The Royal Australian and New Zealand College of Radiologists [the College] and Australia's Health P/L dated 22 May 2006.

This Final Report overviews and describes this staged multi-method research project to develop, test and evaluate new consumer information materials based on needs and gaps in existing Diagnostic Imaging [DI] information sources, and to institute nationally sustainable strategies to provide DI consumer information. The project was conducted in four inter-linked phases completed over 2005-2007, and culminates in this Report and recommended Next Steps. A diagram of the Phases, their components and timeframe appears at Appendix A.

Separate Reports which detail the related activities and key findings for each of the Phases have been provided to the College, and have been made available through the College to its Fellows, for review and comment. These Reports may be viewed at the reader's convenience, by accessing the College website and following the links to the QUDI Program Resources (<http://www.ranzcr.edu.au/qualityprograms/index.cfm>).

This Final Report includes:

- an Executive Summary over viewing the project;
- an introduction describing the objectives of the research project and its desired outcomes;
- a description of the Methodology including the protocols, instruments, type of data collected, consultation strategy used;
- a summary of the literature reviewed for the project;
- the collated results and its discussion of data from the research activities, and
- the conclusions and Next Steps to the College.

References and Appendices are included.

While this Report is intended as a stand-alone report of the activities completed over the life of this project, detail on the methods and results in Stage One have been truncated for convenience. The reader of this Report is referred to the earlier Reports cited here, to gain a deeper understanding of CS4 – Consumer Information Strategies.

## Abbreviations

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Throughout this Report, the following terms are abbreviated as shown for convenience:

<i>ADIA</i>	Australian Diagnostic Imaging Association
<i>ATSI</i>	Aboriginal and Torres Strait Islander
<i>CALD</i>	Culturally and Linguistically Diverse
<i>CATI</i>	Computer Assisted Telephone Interview
<i>CT</i>	Computerised Tomography
<i>DHA</i>	Commonwealth of Australia Department of Health and Ageing
<i>DI</i>	Diagnostic Imaging
<i>DI consumers</i>	Self-reported recipients (or the carers of someone) who had received either x-ray, ultrasound, mammogram, angiogram, CT, MRI or NMI in the twelve months prior to interview.
<i>MRI</i>	Magnetic Resonance Imaging
<i>NMI</i>	Nuclear Medicine Imaging
<i>QUDI</i>	Quality Use of Diagnostic Imaging Program Initiative of the RANZCR, conducted under the strategic direction of the <i>Radiology Quality and Outlays Memorandum of Understanding (MoU) 2003-2008</i> .
<i>RACGP</i>	Royal Australian College of General Practitioners
<i>RANZCR</i>	Royal Australian and New Zealand College of Radiologists. Throughout this Report, the term “ <i>College</i> ” refers to RANZCR.

## Executive Summary

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This Final Report describes the QUDI research project *CS4 – Consumer Information Strategies*, conducted over 2005-2007 in four phases using an iterative multi-method design. Over 2000 Diagnostic Imaging [DI] consumers and 200 DI referrers and practice staff were surveyed for the project.

DI testing is common in the Australian community, yet consumer knowledge about DI tends to be limited to a basic understanding of test purpose(s). Most consumers surveyed for this project reported receiving only verbal information at the time of DI referral, with few receiving written information. Significant numbers across all DI modalities reported receiving no information at all. Many reported they would have liked more information before their DI test.

For many consumers, DI testing is an anxious time as they await clarification from the test. This limits their ability to attend to and recall verbal information, and is associated with higher levels of dissatisfaction with service.

The result of the project surveys of referrers, DI staff and consumers indicated strong support for more information to be available to both referrers and consumers at the referral point, and at the DI practice. Consumers overwhelmingly preferred the referrer to provide this information. Giving information at the DI practice is seen as supplementary, as access may not occur until the consumer presents for the test. A major barrier to its provision is the lack of easily available, suitable information resources tailored to referrer practice, practitioner and consumer need. This project sought to understand what information stakeholders wanted. Content preferences across all stakeholders were for a comprehensive range of topics about DI, and format preferences were for plain text information sheets (rather than brochure formats) that can be printed easily at local levels. Potential consumer information materials tested as part of this project confirmed the acceptability and utility of this information and its format.

RANZCR [the College] is seen by all stakeholders as the appropriate national body to authorise, endorse and make available DI consumer information. It also sets professional standards for radiology practice in Australia and can recommend standards for DI consumer information. These factors indicate that the College is well-placed to influence the information provision behaviour of its Fellows, referring doctors, and DI practice staff. Testing of consumer satisfaction with the information materials provided would also help establish benchmarks for reviewing these practice standards.

This report recommends a multi-level DI consumer information strategy led by the College. The College should set up processes to authorise and distribute the content tested by this project and further develop and disseminate information for specific DI issues and population groups. DI practices and other health information providers can develop locally relevant DI consumer information, guided by recommended standards set by the College. Information provision can be supported by educational and promotional opportunities at all levels. There

is good potential to align these processes with other activities of the College which engage consumers.

For the reader's convenience, overleaf is a list of the next steps resulting from this research and a reference to the location in the body of the report where the context and detail for each of the recommended steps can be found.

# List of Next Steps

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## **Consumer information content and standards**

1. Develop and implement processes to develop, review, update, and authorise the College DI consumer information at regular intervals. (p.54)
2. Review and adopt the tested consumer information as the College's authorised DI consumer information. (p.54)
3. Publish the authorised consumer information on the College website for viewing, download and printing. (p.54)
4. Align the College's DI consumer information activities with other College consumer activities such as standards development processes to ensure the ongoing development and review input from consumers and their representative organisations. (p.54)
5. Adopt the content headings of the project tested information sheets as the recommended topics to be covered by DI consumer information developed by other parties. (p.54)

## **Additional consumer information requiring development**

6. Review and produce College- authorised consumer information across all test modalities for use by cultural groups, particularly those whose first language is other than English. (p.55)
7. Promote the development by relevant DI practices of culture-specific consumer information which meets the College's recommended standards. (p.55)
8. Promote further development of clear cost information to both referrers and consumers. (p.55)
9. Develop specific consumer information for people receiving invasive testing. (p.56)
10. Develop guidelines for DI practices on choice of technologist gender and other cultural, religious or faith issues for people receiving invasive or intimate DI testing. (p.56)
11. Develop and publish consumer information and/or position statements on the use of contrast media and associated risks; and Informed consent for contrast media administration. (p.57)
12. Develop and publish consumer information and/or position statements on radiation exposure and risk in DI testing. (p.57)

### **Multi-level distribution opportunities**

13. Publicise the availability of the College DI consumer information resources to key stakeholder organisations. (p.57)
14. Provide information to the general community about DI by College representatives communicating directly to the public through ongoing mass media opportunities. (p.58))
15. Work with DI provider organisations to review, produce and distribute local DI consumer information which meets the College's recommended topic and content standards.(p.58)
16. Encourage the College Fellows to use local educational activities engaging medical communities to consider addressing consumer perspectives, and the opportunities for giving information at referral and DI service points. (p.59)
17. Encourage the College Fellows to use local opportunities such as community health events to promote consumer information about DI testing to their communities.
18. Develop working arrangements with the RACGP and general practice organisations to ensure DI consumer information is considered as part of broader consumer information strategy development within general practice and becomes a systemic part of the DI referral process with consumers and their carers. (p.59)
19. Develop working arrangements with other specialist colleges and related medical organisations to ensure DI consumer information is considered as part of broader consumer information strategy development (p.59)

### **Professional education and training**

20. Develop and promote resource materials for non-specialist practitioners to update their knowledge on the range and purposes of contemporary DI tests (p61)
21. Promote adoption within undergraduate and postgraduate health professional curricula of a component addressing consumer perspectives and needs in DI testing, including consumer perspectives that relate to cultural, linguistic and faith diversity. (p.61)
22. Promote consideration of consumer perspectives and needs in DI in educational activities conducted by the College and its Fellows. (p.61)

## Introduction

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The *Radiology Quality and Outlays Memorandum of Understanding (MoU) 2003-2008* between the Royal Australian and New Zealand College of Radiologists [the College], Australian Diagnostic Imaging Association [ADIA] and the Commonwealth Department of Health and Ageing [DHA] highlights a collaborative effort between the stakeholders to promote access to quality, affordable Radiology services, and to improve the quality and delivery of Radiology services through the development of a quality framework<sup>1</sup>.

The quality framework - the *National Strategy for the Quality Use of Diagnostic Imaging [QUDI] and Outline Work Plan*<sup>2</sup> is managed by the College, It comprises four sub-programs and objectives. The first of the sub-programs – **Quality Consumer Services** – has as its overarching objective the development and improvement of consumer focussed, accessible and coordinated services that promote informed choice and meet consumer needs.

The project - *CS4 Consumer Information Strategies [CS4]* – is one of the major projects of the Quality Consumer Services sub-program of QUDI. The QUDI Work Plan specifies two key requirements for CS4:

(i) collaboration with consumer organizations to:

- Assess consumer expectations and levels of awareness about the purposes, benefits, limitations and risks of DI services
- Review the literature and existing consumer health information resources and strategies
- Develop, pilot, evaluate and recommend a comprehensive package of information strategies for consumers of imaging services, using a range of media and with particular attention to
  - The Culturally and Linguistically Diverse (CALD), Aboriginal and Torres Strait Islanders (ATSI) and identifiable high use/specific diagnosis consumer groups
  - “Self” referred and non standard services.

(ii) Develop, pilot and evaluate:

- consumer information strategies to promote awareness of the benefits to consumers of practice accreditation and accredited service providers
- informed consent guidelines and
- Recommend sustainable national strategies for implementation by RANZCR, Australian Diagnostic Imaging Association [ADIA], Department of Health & Ageing [DHA], and other stakeholders.

In response to the invitation to submit a proposal to address the requirements of CS4, Australia’s Health P/L (an independent health systems and research and consultancy company) proposed a research design comprising a mixed methods approach to the consultation activities and the *de novo* research tasks. This was to be conducted in four inter-linked Phases over two years, using a range of demonstrated and reliable qualitative and quantitative data collection methods. In May 2005, the College commissioned Australia’s

Health P/L [the Consultants] to undertake this work, to be completed in two key stages by 30 April 2007.

The design of the project in inter-linked phases reflected the importance to the College of supporting sustainable strategies that would improve the access and use of appropriate consumer information about Diagnostic Imaging. A key focus of the approach adopted by the Consultants was to ensure that key stakeholders were provided the opportunity to articulate their expectations and preferences about consumer DI information; that the development of appropriate consumer information about DI would reflect stakeholder views; and materials and strategies for potential adoption would reflect current evidence including relevant models for dissemination of consumer information.

The research design commissioned by the College permitted wide consultation with key stakeholders; the need to allow adequate time for consultation activities to take place, and an iterative approach which takes into account the findings that emerged from each component and integrated these into the subsequent processes. Throughout the project, the chosen design facilitated close interaction with the College, its Fellows and its key stakeholders including consumers of DI services, general and specialist practitioners who refer consumers for DI services, DI service providers, and the broader Australian community.

This Report reflects that level of collaboration.

The two stages of CS4 comprised:

Stage One – Phases 1 and 2:

- A **Project Initiation** Phase (1 June – 30 June 2005) which required a detailed project plan and timeframe; the establishment of a Project Reference Group; and liaison with suitable organisations to conduct a nationally-representative population survey;
- A **Consultation Phase** (1 July – 31 October 2005) requiring a literature review; consultations with key stakeholders using semi-structured interview, written survey, focus group and computer-assisted telephone survey; and
- A **Reporting phase** (1 November – 31 December 2005) requiring the reporting of research outcomes and literature review; and a detailed work plan and timeframe for the subsequent Phase 3 and 4 of the CS4 project as proposed by the Consultants.

Stage Two – Phases 3 and 4:

- **Finalisation of the project work plan** (1 June – 30 June 2006) including agreement on plan, deliverables and budget
- A **Design and Development stage** (1 July– 31 October 2006) which required the design and development of information materials addressing consumer and practitioner needs; and consultation with key stakeholders (especially College Fellows) on those materials
- A **Pilot and Evaluation stage** (1 November 2006 – 30 April 2007) which required pilot testing and structured evaluation of the educational materials; and
- A **Report and Recommendation stage** (1 May – 30 May 2007) which would report the collated research findings, and make recommendations to RANZCR for

sustainable national strategies relating to consumer DI information, for implementation by RANZCR, ADIA, DHA and other stakeholders.

Stage One has been extensively reported to the College (see *Scope of the Report* above), and an overview of that Stage's methodology and summary of results is presented in the relevant sections of the current Report.

Based on the findings and recommendations arising from the initial Phases, a detailed Work Plan for the research and consultation strategies for the Third and Fourth Phases of the project was submitted to the College and approved on 22 May 2006. Work commenced on these Phases in June 2006.

Phase 3 was required to develop, pilot and evaluate appropriate consumer DI information materials, and the final Phase 4 integrates all the results and learnings in order to develop recommendations for sustainable national strategies for implementation by RANZCR, ADIA, DHA and other stakeholders. Details of the methodology for Phase 3 and 4 are provided in the Methodology section of this Report.

An Initial Report on the first Stage of Phases 3 and 4 was provided to the College on 31 July 2006. That Report *CS.4.ii CONSUMER INFORMATION STRATEGIES – Phases 3 and 4, Initial Report* outlined the tasks and processes required of this project in its current Phases. A Mid-term Report was provided to the College on 31 October 2006. That Report *CS.4.ii CONSUMER INFORMATION STRATEGIES – Phases 3 and 4, Mid Term Report* outlined the tasks and the work to date, and reported on the infrastructure issues and process issues that were identified and reported in earlier reports on this project.

This Final Report overviews the whole project and focuses on the results of the strategies to develop, pilot and evaluate consumer DI information. It culminates in a suite of recommended steps for sustainable national strategies to improve the availability of appropriate DI information for consumers.

## Methodology

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In addressing the broad research question and specific aims of CS4, it was necessary to adopt a 'real world' research design – which would recognise the limitations of conducting research within busy clinical practices; consumer and practitioner issues including access, privacy and confidentiality issues; data collection and project timeframes; and project objectives.

The research design was required to address issues such as sampling, validity of data and generalisability of the findings and provide results that were supportable and robust. A non-experimental, multi-method strategy utilising both qualitative and quantitative methods was selected to enable triangulation of the various data and information sources to add to the robustness and generalisability of the findings. The nature of the practice environment obviated random selection of samples and thus focussed on convenience sampling within the DI practices and the healthcare consumer organisations that agreed to participate. The exception to this was the conduct of the Computer Assisted Telephone Interview [CATI] for which a nationally representative population sample was randomly selected.

Application of these methods to appropriate population samples provided numerical data at categorical (nominal) level, suitable for non-parametric statistical testing for significance, and qualitative textual data suitable for thematic analysis. A matrix outlining the main data focus of each collection method is included in Appendix B of this Report.

### Stage One

In Stage One of CS4 (Initiation, Consultation and Reporting), the particular methods used were:

- A Project Reference Group to provide advice and overview of research activities and data interpretation
- Review of contemporary Australian and international published and unpublished literature on consumer information in DI.
- Computer Assisted Telephone Interviews [CATI] with DI consumers and the general population
- Written Brief self-report Survey of DI Practice Staff in 5 DI practices
- Written Brief self-report Survey of Referrers to the 5 participating DI practices
- Written Brief self-report Survey of consecutive DI consumers
- Focus groups with consumer representatives from peak health consumer organisations, selected on the basis of their expressed capacity and willingness to participate in the focus group activities

In relation to DI consumers, the data set of central interest to this research comprised: their exposure to, experiences, expectations and awareness of DI services in Australia; their knowledge of DI practice accreditation; their knowledge and information needs; their preferences for, attitudes to, and acceptability of information sources, content and format; specific information issues related to their provision of informed consent; and their views on processes which enable or act as barriers to information dissemination.

In relation to DI professionals (practice staff and the referring doctors), the data set included: their expectations of consumer DI information needs; their attitudes to provision, uptake and use of consumer information; their preferences for, and acceptability of, information sources, content and format; their views on the role of information in obtaining informed consent; concerns about the provision of consumer DI information; and their views on any processes that enable (or act as barriers to) information dissemination.

### **The CS.4 Project Reference Group**

The membership and role of the Project Reference Group has been reported in detail in the Stage One Reports to the College. In summary, the Project Reference Group was constituted to reflect both the need to focus on consumer perspectives, and to understand other stakeholder views. In both stages of CS4, the role of members was to use their expert knowledge and networks to:

- Comment on the design, development and implementation of Project activities, including the instruments proposed for data collection
- Advise on who should be included in the activities (for example which consumer groups; which Diagnostic Imaging [DI] professionals and DI practices) and how to best link with these stakeholders
- Review and comment on the data collected from the project activities, the interpretations made of it, and comment on the proposed reports to the College
- Provide advice on the research design and data collection strategies proposed for the Stage Two activities

Communication with the members of the Project Reference Group was conducted throughout the life of CS4 using phone and email contact, formal teleconferences and face-to-face meeting. Members were provided with details of the project methodology, summaries of the results for each Stage, copies of the Draft Reports of each stage for comment and review; and copies of the Final Report for Stage One and the draft Final Report. Members will receive copies of the Final Report once it has been accepted by the College.

### **Literature Review**

A selective literature review was conducted to set the context for this project. The review was to identify consumer awareness and expectations of DI and DI services, including the purposes, benefits, limitations and risks associated with DI services; informed consent; accreditation of service providers and practices; and consumer preferences for information

strategies was required for this Project. Of particular interest were any differences in preferences associated with age groups, gender, health beliefs, personal control, location, professional status, and prior experience. Key terms and excluded terms were defined, and reports were not excluded on the basis of the design or the quality of the methods used.

The review was structured to include published professional and consumer literature published after 1990 – reflecting the emergence of the focus on evidence-based healthcare. It also included other non-peer reviewed and unpublished document sources such as health policy and program initiatives; reports from Australian and overseas Specialist Medical Colleges; documents from health consumer organisations.

The formal report on the results of the Literature Review was included in the *Final Report of Phase 1 and 2 of CS4*, submitted to the College on 26 February 2006, and has not been reproduced here. The reader of the current Report is referred to Section 5.1 of the earlier Report for the details of the purpose of the review, the method of conducting it, the inclusion and exclusion criteria, and the results of the review. A summary of results from it is presented in the next section of this Report.

### **Computer Assisted Telephone Interviewing [CATI]**

A Computer Assisted Telephone Interview [CATI] was selected as an appropriate, cost effective, responsive, verifiable data collection strategy for eliciting general public and DI user views on DI, DI modalities, DI information experiences, needs and expectations. The justification for use of a CATI, the processes followed, including construction of a purpose-specific modular survey instrument, its pilot testing, sample selection, live interviewing, and results obtained, has been previously reported to the College (see *Final Report of Phase 1 and 2 of CS4, 26 February 2006*) and is not reproduced here. The reader of the current Report is referred to Sections 4.1, 4.2 and 5.2 of the earlier Report for detailed information about the CATI used in CS4. A summary of the results from it is presented in the next section of this Report

### **Written Brief Surveys – Staff, Referrers and Consumers**

Stakeholder-specific, brief, self-completed, written surveys were developed, validated and administered as a minimally intrusive mechanism for collecting perspectives on consumer DI information. Surveys were distributed to a convenience sample of DI practices, stratified to reflect the sampling location used in the CATI (regional, outer metropolitan and metropolitan); capture a mix of predominant referral stream (General Practitioner, Specialist) and practice foci (multi-modal, hospital or community-based).

The development of the consumer and practitioner survey content; sample selection; survey distribution; data collation, interpretation and discussion, was reported to the College in the *Final Report of Phase 1 and 2 of CS4*, submitted to the College on 26 February 2006, and has not been reproduced in detail here. For the detailed description of this strategy, the reader of this Report should refer to Sections 4.2.3, 4.2.4, 5. 3 and 5.4 of the earlier Report.

A summary of the results of the consumer and practitioner surveys is presented in the Results Section of this Report.

## Focus Groups

Focus Groups of consumer representatives to obtain their individual and organisational perspectives on consumer DI Information were conducted. Group participants were selected from healthcare consumer organisations ensuring a broad enough mix to enable diverse opinions and experiences to be provided. The earlier *Final Report of Phase 1 and 2 of CS4*, submitted to the College on 26 February 2006, contains a detailed report of the focus group method, its conduct, the data obtained from it, and the use made of that data in developing subsequent components of CS4. The reader of this Report should refer to Section 4.2.5 of the earlier Report for the detailed account of this activity. A summary of the results of the Focus Group activities is presented in the Results Section of this Report.

## Stage Two

Stage Two of CS4 also had two phases - **Phase 3** was required to develop, pilot and evaluate appropriate consumer DI information materials; **Phase 4** was the integration of the results and learnings from literature review, the data collection strategies chosen; the focus group activities, and the evaluation of piloted materials, in order to develop recommendations for sustainable national strategies for implementation by RANZCR, ADIA, DHA and other stakeholders. The culmination of Stage Two is thus a suite of evidence-based next steps for the provision and use of consumer DI information.

In Stage Two of CS4 the methods selected for Phase 3 (design, pilot test, and evaluation) comprised:

- Content development: Key findings from Stage One; Stakeholder interview; Feedback Strategy using Focus Groups
- Pilot test and evaluation: Collaboration with DI practices; Development of GP participant incentive (RACGP Continuing Professional Development Category One points); Dissemination of materials; Convenience sampling of practice staff, referrers, consumers; reporting feedback

These are described in detail below.

### Content development

Information sheets were developed reflecting the preferred content and format indicated by the earlier research. The adoption of an iterative approach to the development and validation of consumer information ensured the draft materials for subsequent pilot testing and evaluation were appropriate, accurate and verified, reflected actual and potential needs, and recognised practice constraints.

Using the results and learnings from the research and consultation activities of Stage One, particularly the preferences expressed by stakeholders, the quality control issues such as accuracy, currency and credibility, and the realities of clinical and service environments, the Consultants conducted a series of interviews with key stakeholders. These included discussions with College Fellows, the Modality-Specific Technical Reference Groups of the College (through the QUDI Program Manager), the Project Reference Group, and an office-bearer from ADIA on likely content for consumer DI information. Concurrently, consultation with several of the DI practices that had participated in the Stage One activities was sought – on acceptable content and especially on the proposed format and likely mechanisms for dissemination of materials once developed.

As proposed in the Work Plan approved for this part of CS4, the content for consumer information also considered the more specialised and complex information and process needs of people of different cultural and primary language backgrounds, those with disabilities and particular demographic groups such as young people, parents or the elderly, and those from ATSI backgrounds.

The key questions posed by consumers in Stage One provided a template for the development of a 'minimum content' set, which was elaborated on for each of the four most frequently requested DI tests – X ray, Ultrasound, CT Scan and MRI. This was structured as 'basic' level information relating to purpose, preparation, process, duration, risk, benefits, limits, costs and DI staff role associated with each modality. Brief information about the specialty of radiology, the role of the College in standard setting, and practice accreditation was also included.

An equally important consideration at this time was the need to address ease of access for both healthcare practitioners and consumers. Potential options for storage of proposed materials were canvassed, including the potential for pre-printed or electronic forms which might reside as PDF versions for placement on requesting doctors' PCs, be migrated into existing proprietary medical software programs, or reside on appropriate stakeholder websites, including that of the College.

Similarly, the nature of the environment in which the materials might be used, including the consumer-provider interaction, and current practices in relation to information giving and needs checking, was considered. An important finding from our Stage One research was the recognition of a high level of situational anxiety in consumers referred for DI tests. This is understood to be related to concerns about health status, lack of information about the DI test and its procedures, and unfamiliarity with the DI practice environment (including processes, technology and outcomes). The literature reviewed indicated that when information (including that about risk) is provided, it does not increase anxiety or the prevalence of adverse events, and it enhances informed consent and consumer participation in the service process. The earlier research also indicated that lack of information is also associated with dissatisfaction about the DI service and test outcomes. The results of our research indicated that addressing information needs in a structured way could lessen this anxiety. It was also apparent that other consumer attributes (such as age, gender, type of DI,

previous experience, educational level, cultural/social factors, and language or disability requirements) were important considerations in constructing information resources. These understandings were central to the construction of information intended for consumers – it must offer clarity, be conveyed in appropriate language, and address the specific issues highlighted as information gaps by consumers.

A Feedback Strategy using Focus Groups of consumer representatives from the organisations participating in the Stage One research was selected as an efficient mechanism for obtaining direct feedback on the draft materials, and to inform the final design and information content for the subsequent pilot testing and evaluation. As previously reported, the participating consumer organisations reflected the likely presence of both high and low rate users of DI services, included general health consumers; people with specific health conditions such as arthritis, cancer, vascular disease; carers and parents; older people and people from different language and cultural backgrounds.

Participating organisations received a nominal fee to cover reasonable costs of identification and communication with a sample of their members, venue hire and refreshments for focus group participants. A small honorarium was also provided to each focus group participant member in recognition of their time and contribution to the discussion.

The particular brief of the Focus Groups was to determine the relevance and acceptability to consumers of the information proposed to be included; the readability and comprehensibility of it against common understandings of the meaning of terms and language used; and usefulness of the proposed format to consumers. The views of the Focus Group participants was also sought on the mechanism proposed for the pilot test, including the proposed method of dissemination to DI consumers during the pilot (and subsequently) and the nature of feedback to be sought from consumers receiving the pilot materials.

Copies of the proposed materials were provided to Focus Group participants at the time of the group, so that exposure to the draft materials would be reflective of the time frame that would be expected to prevail in real practice settings. This ensured that the views of members captured the immediacy of the information presentation and help to draw attention to any outstanding strengths and weaknesses of the information as presented.

All focus group participants were also invited to provide comments and reflections on the materials and processes out of session.

### **Pilot test and evaluation of the draft materials.**

Based on the discussions with, and advice of the stakeholders described above, a process for conducting a pilot test of selected consumer DI information was developed, and approved by the College.

A convenience sample of two of the 5 DI practices that had participated in Stage One research activities was selected to conduct the pilot test and evaluation. The Principals and

Practice Managers of these DI practices had expressed an interest in further participation in the research project. This provided one metropolitan and one regional DI Practice.

The participating DI practices were invited to comment on the proposed pilot strategy and their preferences for receipt, distribution and evaluation of the materials to be used was sought. Their key practice staff was also briefed on the strategy for pilot testing, as they may receive feedback from consumers participating in it.

Through the DI Practice's usual referrer communication channels, the Practice Manager distributed a brief outline of the pilot, its requirements for participation, the incentive for participation, and the process for gaining feedback from the referrers and consumers to all the referring doctors in the Practice database. For efficiency, responses to the invitation to participate were recorded directly by the Consultants and the DI Practice was advised of the numbers taking up the invitation.

Outcome measures for the pilot were selected based on discussion with the College, the Project Reference Group, the participating DI Practice Managers, and the consumer focus groups. These measures included consumer and professionals' attitudes and responses to the information materials, and their use of it. The outcome variables selected are consistent with those canvassed with the consumer focus group participants: format, presentation, strengths, and weaknesses of content, acceptability and relevance to consumers, readability and comprehensibility.

Evaluation of responses to the pilot materials and discussion of future consumer information strategies include *process* issues (such as content, delivery options, costs of production at a local level, consumer and practitioner reaction to the pilot information packages, reported utility of the pilot materials); and *impact* issues (including immediate effects of the information packages such as reported effect on consumer-provider interaction, or further information seeking; and comments on awareness-raising strategies for consumer information sources, such as improved knowledge or increased use of information sources).

### **RACGP Continuing Professional Development [CPD] Points**

Given the high number of DI requests initiated by Australian GPs - estimated to be about 60% of all imaging tests, and at the rate of 1 test per 13 GP consultations (8 million in the period 1999-2000)<sup>1</sup> - the practical issue of gaining GP participation in the pilot and evaluation processes for consumer DI information was important. GPs are notably busy practitioners, and participation in research activities competes with other practice priorities. This also indicated that the selection of environments in which pilot testing of information materials could be conducted would need to reflect practice capacity (such as IT infrastructure/desktop support systems) as much as the likely predominance of requests for any particular modality.

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<sup>1</sup> Australian Institute of Health and Welfare (2001). Imaging Orders by General Practitioners in Australia 1999-00, AIHW GP Statistics and Classification Unit Canberra

A wide range of information-related projects and other quality use strategies (such as the National Prescribing Service's Consumer Quality Use of Medicines), have been conducted within the primary care environment, and a selection of these was reviewed to assist the design and feedback stages for input from GP and their organisations. In previous work with GPs, the Consultants found that being able to offer an incentive to participate greatly encourages uptake in research.

One such incentive is the provision of access to Continuing Professional Development points. For the current project, the NSW/ACT Faculty of the Royal Australian College of General Practitioners [RACGP] advised that participation in the research activities required in the pilot test may attract points, allocated under the 'Category Two' provisions of the Quality Assurance and Continuing Professional Development 2005-2007 Triennium. A requirement of an application to the RACGP for CPD points is the involvement of a General Practitioner in the development of the activities for which credit is being sought. Dr Peter MacIsaac (a General Practitioner) kindly provided this assistance, and the application for CPD consideration was submitted to the RACGP in mid November 2006.

On advice from RACGP, this was reframed as a 'Category One' (the highest category) application, which was adjudicated and assessed by the NSW/ACT Faculty of RACGP as an '*Active Learning Module*', attracting 30 Category One points. A copy of the RACGP approval letter is attached at Appendix C of this Report.

The activity was designed to enable those participating to increase their knowledge of effective consumer DI information strategies; develop skills in discussing DI issues with consumers; reflect on their attitudes to information provision to DI consumers; and change current DI information-giving behaviours (as identified in the Stage One practitioner surveys).

Core activities of the module involved '*predisposing activities*' (invitation response; summary of Stage One results; briefing meeting to review and discuss results, pilot test materials, activities, current practices, needs identification, risk-related criteria; agreement to participate); '*structured learning activities*' (incorporate test materials into current practice resources and consultation processes; distribute test materials at time of DI request; seek feedback on materials; record issues and comments for feedback to Consultants); and '*reinforcing activities*' (de-briefing meeting; report of pilot activities; discuss outcomes in own practice; reflect and advise on enablers, barriers and modifications to facilitate successful national implementation; complete written survey).

The module activities comprised those conducted within their usual practice routines and those discussed at workshops held over two nights. The workshops provided an opportunity for GPs to review their current and pilot test processes for DI information delivery, review the findings of the Stage One research and its implications for GP referrers to DI services; provide their insights on the process and interaction between GPs and their DI consumers; and share insights on the way consumer information is accessed, maintained and offered at practice level.

Workshop One comprised an introduction by the Practice Principal and the College Fellow. The project was overviewed; the proposed protocol discussed, the materials demonstrated, the recruitment target and dissemination process outlined; the feedback process discussed. The initial meeting also finalised the design in consultation with the participating GPs to reflect and incorporate local factors affecting DI consumer information delivery – such as p[practice consumer profile, volume and type of DI requests made, IT and practice systems capability for information storage and retrieval, and provide familiarity with consumer needs for DI information.

Workshop Two was structured as a reflective discussion and feedback, and evaluation of the pilot test tasks.

### **Dissemination of test materials**

Participating referrers were offered printed and electronic (PDF) versions of the test materials. Printed copies were sufficient to meet the estimated needs of the individual practices for each of the modalities under consideration; PDF versions were suitable for inclusion in desktop PCs for accessing and printing as required. Referrers were requested to provide the relevant modality information sheet at the time of ordering the DI test, to consecutive patients over the one month test period. Referrers were advised that the College had approved materials for the purpose of the pilot test only, and were requested to cease the distribution of the test materials at the conclusion of the time period or when their quota had been filled (whichever came earlier).

Electronic versions of the test materials were also published on a dedicated page of Australia's Health P/L website ([www.australiahealth.com](http://www.australiahealth.com)) for the duration of the test period. The web vector provided participating consumers with the option of registering their feedback electronically.

### **Reporting feedback**

Referring Doctors: Any immediate reaction to the sheet or feedback to the doctor at the time of provision or in subsequent consultation on examination results was required to be recorded. As described earlier structured feedback from the participating doctors was elicited at the two workshops conducted as part of the Active Learning Module for RACGP CDP points. Face-to-face and telephone interviews were organised for some participating practices in order to follow up feedback reporting.

DI Consumers: Consumers were invited by the referring doctor, and also by written invitation appearing on the information sheet to give feedback to their doctor, the staff at the DI practice they attended, or directly to the Consultants. Options available to consumers for reporting their feedback included: verbally to their doctor, to the DI staff, or directly to the Consultants via a FreeCall (toll free) 1800 number advised on the information sheet; or by completion of an on-line survey available by following the links at [www.australiahealth.com](http://www.australiahealth.com).

Prompt questions to guide consumer feedback (Was the information easy to read and understand? Was it useful? Did it meet your needs for information about your radiology test?) were provided on the information sheets. Consumers calling the feedback FreeCall number were provided with a pre-recorded message guiding their feedback. This enabled 24 hour access to this feedback system. Callers were offered the option of recording their feedback anonymously, speaking directly to one of the Consultants, or leaving a message to return their call at a time convenient to them.

# Results

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## Summary Stage One Results

### Literature Review

Guided by the methodology suggested in the briefing document, and in consultation with the College and the Project Reference Group, a review of literature from 1990 – 2005 was undertaken for this Project. The formal report on the results of the Literature Review was included in the *Final Report of Phase 1 and 2 of CS4*, submitted to the College on 26 February 2006, and has not been reproduced here. The reader of the current Report is referred to Section 5.1 of the earlier Report for that review.

In summary, the literature review indicated that:

- “State Anxiety” (i.e. transient, situational anxiety as opposed to predisposition to anxiety – “Trait anxiety”) is high in the context of DI – this is presumed to relate to health uncertainties and the discomfort of some DI procedures
- There is an association between anxiety and stress experienced due to the DI procedure and the subsequent reporting of dissatisfaction with the DI service experience
- Where information about DI process and procedures is provided as part of systematic, supportive processes, this is effective in managing anxiety
- Knowledge of DI (where this has been assessed) is low (and especially so in the UK)
- With experience of DI, anxiety decreases and knowledge increases
- Web-located sources were seen by healthcare professionals as an opportunity for giving information, but this source is not favoured by consumers. Where general web-based DI information has been assessed for its quality (i.e. accuracy and reliability), it has been found not to reach acceptable standards and in some cases provided incorrect advice
- Where a structured information and education approach has been taken by DI practices, this is rated favourably by all stakeholders
- Where DI risk information is provided, this does not increase anxiety or the prevalence of adverse events; and enhances informed consent
- There are broader role opportunities for DI practices in education and clinical management - e.g. in relation to improved rates of screening

These key findings underpinned the development of Phases 3 and 4 of this Project, and in particular provided a reference point for the materials developed for review and testing in the feedback and pilot stages.

### **Computer Assisted Telephone Interview**

The Computer Assisted Telephone Interview [CATI] for this project was conducted with a nationally representative sample of the Australian population aged 15 years or older. The sample included members of the general public (a random sample) and a further screened sample of 'DI consumers' (defined as those telephone interview respondents who reported they or someone for whom they are a parent, guardian or carer had, received either x-ray, ultrasound, mammogram, angiogram, CT, MRI or NMI in the twelve months prior to interview).

The CATI was reported in detail in the *Final Report of Phase 1 and 2 of CS4*, submitted to the College on 26 February 2006, and has not been reproduced in detail here. The reader of the current Report is referred to Sections 4.1, 4.2 and 5.2 of the earlier Report for detailed information about the CATI used in CS4. A summary of the results of the CATI is presented below.

The CATI Survey completed 2245 interviews, conducted between Wednesday 21 September and Friday 14 October 2005.

- At least 94% of the total CATI sample (including 86% who had not received any DI within the previous 12 months) was familiar with the terms 'X-ray', 'ultrasound', 'mammogram' and 'CT (or CAT) Scan'. 'MRI' and 'angiogram' were terms known to at least 80%, but 'NMI' was known by that name to only half of the total CATI sample.
- Unprompted awareness of what the various types of DI are used for was limited, and self-rated knowledge of the processes, staff roles, risks and limitations, and out-of-pocket expenses for the tests was relatively poor.
- The screened sample comprised 1645 respondents, who reported at least one of the agreed list of DI in the previous twelve months (3% NMI; 4% angiogram; 6% MRI; 9% mammography; 10% CT; 20% ultrasound; and 28% X-ray. Multiple DI types within the same period were common for ultrasound (41% also having X-ray) and MRI (58% also having CT).
- Up to 50% of the DI consumers reported they had received no information about the test they were to have, from any source, prior to its performance. Those who reported they had received information about their requested DI prior to it being performed, reported this was solely verbal information, and it had been provided in the context of the request by their referring doctor, or immediately prior to performance of the test when it was provided by the DI practice staff.

- About 35% of DI consumers would like more information than they had been given about their particular imaging test, and this was particularly evident among those who had not received prior information.
- Verbal information (preferably from their requesting doctor), was important to consumers, however written material was the preferred method for information delivery, particularly when the request for the imaging was made at a time of heightened anxiety and discomfort.
- DI consumers expressed a preference for clear, basic written materials (such as fact sheets) to be provided to them at the time the test was ordered, and this would afford them the opportunity to interact with the information as well as provide a basis on which to discuss as needed with their requestor or to seek further information as desired.
- Their preferences for the content of such information included a description of the process for the particular imaging test; any preparation required; an overview of risks and limitations; and likely out-of-pocket costs.
- This sample also considered that the basic information could be supplemented by a more comprehensive version for those who would like to know and understand more about the tests they are to undergo.

### **Surveys of DI Practice Staff, Referrers and Consumers**

A written survey of a convenience sample of DI practitioners, practice managers, practice Staff (including Technologist and Reception staff), and a separate Survey of the most frequent referring doctors to the practice, was completed. A 'Waiting Room' survey of up to 100 consumers presenting to each of 5 DI practices was also conducted as a minimally intrusive data collection strategy. The DI Practice Staff Survey, the Referrer Survey, and the consumer Waiting Room Survey have all been reported in detail in the *Final Report of Phase 1 and 2 of CS4*, submitted to the College on 26 February 2006, and this is not reproduced in detail here. For the detailed description of this strategy, including survey design, validation, data results and analysis, the reader of this Report should refer to Sections 4.2.3, 4.2.4, 5. 3 and 5.4 of the earlier Report.

A summary of the results of the consumer and practitioner surveys is presented below.

DI practices were selected to reflect the regional, outer metropolitan and metropolitan stratification used in the CATI sampling strategy. The sample was also stratified to include a mix of referrers and practice characteristics, including location, DI modalities, and predominant referral stream. Included in the sample was:

- An outer metropolitan, multimodal, teaching hospital practice with a strong specialist referral stream (it also served an area with a high culturally and linguistically diverse [CALD] migrant population)

- One inner metropolitan community-based, and one outer metropolitan community-based practice - both multimodal practices, with a mix of specialist and general practitioner referrers
- One regionally-based community practice, with a high proportion of general practitioner referrers, and
- A rural private practice with a mix of specialist and general practitioner referral streams.

### **DI Staff and Referrers:**

- A total of 171 surveys were distributed to DI staff, and 420 to the most frequent referrers to the participating DI practices, for reply paid mail or email return (as convenient to the recipient) directly to the Consultants. Completed, valid responses were received from 93 DI staff (54% of the sample) and 112 referring doctors (27% of the sample) within the timeframe for this activity.
- There was considerable agreement between DI staff and referring doctors on a number of survey items. While two thirds considered consumers have some basic knowledge about DI (67% DI staff, 68% referring doctors), when asked if they thought consumers were well informed about their DI prior to its performance, one third (35% DI staff, 30% referrers) considered most people are poorly informed, and only 7% of DI staff and 3% referrers) thought consumers are well informed about DI. These responses did not differ statistically between the participating DI or referring doctors' practices.
- A low proportion of both respondent groups think that quality consumer DI information is available (36% DI staff, 13% referrers); half of DI staff (48%) and two thirds of referrers (65%) think that quality information is not easy for consumers to find. These responses did not differ statistically between the participating DI or referring doctors' practices.
- More information in community languages was identified as a need by both groups (48% DI staff, 45% referrers); more information for carers of the elderly (50% DI staff, 34% referrers) and for parents (55% DI staff, 42% referrers). There were differences between practices with those whose demographic included higher proportions of each category of consumer agreeing more strongly with the item.
- DI Practice staff and referring doctors indicated that more information about the purpose, preparation, processes, length of time for test, risks, benefits, limitations, costs, role of DI staff and DI practice accreditation ought to be provided to consumers (over 57% of DI staff thought this should be available in their own practice, and 56% DI staff thought this information should also be available in referring doctors' practices; 54% of referrers thought this information should be available in their own practices and 60% thought this information should also be available in DI practices).

- Two thirds of respondents (67% DI staff, 64% referrers) expressed a preference for providing consumer DI information verbally; 81% DI staff and 44% referrers expressed a preference for providing consumer information in the form of pre-printed brochures; handouts printable from their desktop were the preferences of 39% DI staff and 56% of referrers 56%; and referral of consumers to an appropriate internet site for DI information was preferred by 18% DI staff and 19% referrers.

### **DI Consumers:**

- 100 surveys provided to each participating practice, and were made available for a period ranging from 7 to 20 days (practice choice) in the practice waiting room. The surveys were designed for completion at consumer convenience and could be collected at the DI practice, or returned by reply paid mail directly to the Consultants. 153 (69% female) completed valid responses were received within the timeframe for this activity. One third of responses were from consumers attending for their first ever DI test.
- A significant majority (80%) reported that verbal information and 4% reported that written information about their DI procedure had been provided to them by the referring doctor. 23% reported receiving verbal information, and 1% reported receiving information in written form from the DI practice they attended at the time of making their appointment or time of test. One percent was referred by their referrer to a web site for information about their DI; no-one was referred to web site information by the DI practice.
- Less than half (46%) considered consumer DI information was easy to find; was easy to understand (43%); was available in appropriate community language (16%); intended for carers (12%) or parents (20%) of consumers undergoing the test. There was a clear preference for verbal information (85%) from the referring doctor although 38% wanted written information.

### **Focus Groups**

Focus Groups were held with consumer organisation representatives in order to 'drill down' into key issues identified in the other consultation strategies, and those identified in the literature review. The results of the Focus Group strategy was reported in detail in the *Final Report of Phase 1 and 2 of CS4*, submitted to the College on 26 February 2006, and is not replicated here. The reader of this Report should refer to Section 4.2.5 of the earlier Report for the detailed account of this activity. A summary of the results of the Focus Group activities is presented below.

- Five focus groups were conducted with a total of 32 participants from consumer organisations who represented either general health consumers or consumers with specific health conditions. Focus Groups were conducted in outer metropolitan Sydney, inner metropolitan Melbourne; Canberra; and one by teleconference for

members in Tasmania, Northern and Southern Western Australia, Western NSW, rural South Australia, and outer metropolitan Darwin.

- Focus group participants reported that consumers don't tend to get DI information unless they ask for it, and then it is predominantly verbal. They believe healthcare professionals have a tendency to assume consumers *already know* about DI - or will ask, however participants report the practice environment limits the scope for their further enquiry. Importantly, participants reported feeling anxious in the context of DI (related to uncertainties about their health, limited information about the DI test required, and the unfamiliar and impersonal nature of the DI environment). This limited their ability to recall important verbal information.
- Participants reported that information they feel is important to their decisions and confidence about undergoing the DI test was frequently not addressed. This information included that about purpose, preparation, procedures, noise, restricted movement, time taken for test, risks (including cumulative exposure to radiation, for children, contrast), what limitations prevail (such as pregnancy or contraindicating conditions), staff roles in tests, cost related information such as differential eligibility for subsidy) in-test procedures; noise; restricted movement.
- Participants reported their preferred source of information was the referring doctor, at the time of making the request, but they also valued DI practice-specific information. Written information valued, but not as substitute for consultation dialogue, and there was a clear preference for a combination of verbal and written. Participants emphasised the general principle of providing information at multiple points and multiple times in the care pathway, with specific attention to sight impaired, children, CALD and ATSI needs<sup>2</sup>.

## Overall Summary Stage One evidence

Triangulation of the rich body of data resulting from the suite of strategies described above indicated a number of key aspects in relation to improving consumer DI information flows:

- Consumers tend not to get information about DI testing unless they request this information. Where it is given, it is predominantly verbal. The evidence supporting this comes from the CATI, the Surveys for Referrers, DI staff and consumers, and the Focus Groups.
- There is a need for more consumer information about DI tests to be available, and this need is expressed by consumers, DI staff and referrers. The evidence supporting

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<sup>2</sup> Through the project collaboration with the NSW Health Multicultural Health Communication Unit, the Consultants conducted a separate process to gather the views of multicultural community members

this comes from the Literature review, the Focus Groups, the CATI, the surveys for Referrers, DI staff and consumers

- There is a preference for more information at the referral point and also through DI practices. The evidence for this is found in the Focus Groups, Referrer, Staff and consumer surveys.
- The need for information varies by age, gender, by type of DI, by previous experience, educational level, and by cultural/social factors. Evidence supporting this comes from the Literature review, the Focus Groups, the CATI, the Referrer and DI Staff surveys.
- Basic DI information that includes information on where to find more (detailed) consumer information, and that is simple, readable and accessible and part of a process should be provided to all consumers at the time of initial referral. Supplementary, more detailed information which can be accessed as desired should be available for those who require it. The evidence supporting this comes from the Literature review, the consumer survey and the Focus Groups
- State anxiety is high given the context in which DI takes place, and the limited information made available to meet consumer needs. Coupled with the perceived characteristics of the DI environment (impersonal and mechanistic), this inhibits the ability to recall relevant verbal information. This also indicates the need to address process and environmental issues. The evidence supporting this comes from the *Literature* review, the Focus Groups and the Referrer and DI staff surveys.

## Stage One Conclusions

### **Consumer DI information is helpful to consumers and health service providers.**

The literature shows that consumers who have DI tests tend to be anxious and this anxiety is associated with the DI situation (State anxiety) rather than an inherent characteristic or predisposition to anxiety (Trait anxiety). This anxiety is related to the uncertainty of their health status, which the DI test is intended to clarify; and increased by participation in an unfamiliar procedure (procedural anxiety) in an unfamiliar context, which can be experienced as impersonal, mechanistic and remote.

With consumer's experience of DI tests, knowledge of DI testing is increased and anxiety reduces. Giving information and the opportunity for further enquiry about DI testing also decreases anxiety. Satisfaction with the DI procedure is associated with improved information and supportive, personalised DI processes; dissatisfaction with the procedure and subsequent outcomes is higher in those not given information and supportive processes. Participation in screening programs is enhanced by information and education processes; participation is poorer when there are knowledge and information gaps.

Our research shows that at a population level consumers generally have a basic understanding of the purpose of common forms of DI, but lack information particularly about risks, benefits and where to find further information. The research provides hard data to support many of the assumptions that had been made about consumers' information needs.

For some particular population groups such as young people, knowledge is generally lower; while language and educational differences can also contribute to lower knowledge.

Both DI referrers and DI staff in our survey samples report they would find it useful to have more consumer information resources in their practices. This is a consistent finding regardless of practice location.

### **Consumer DI information should be tailored to consumer needs**

Consumers in our study showed a preference for plain language, easily understandable information which will meet most needs, with additional information available for those with more detailed enquiry.

Our research shows that DI consumer information content should address standard issues such as the purposes of different tests, preparation requirements, the roles of DI staff in performing the test, length of time for the test (including wait time), the usual processes performed during the test, information about risks, side effects or adverse events, interactions with existing medicines, and any contraindications (e.g. pregnancy, implants). It should also contain benefits statements, information on when results can be expected and how these will be delivered, and expected costs for the service and any additional out-of-pocket costs. Information on DI practice and practitioner accreditation is also seen as important, especially by referrers and DI staff. Information in community languages other than English, and which is culturally appropriate, is also a part of tailoring information to consumer needs.

### **Consumer DI information should be provided as part of a systematic and comprehensive process**

Individual consumer information needs vary over time and are associated with a host of factors including the salience of the health issue, beliefs (including those culturally-bound) about illness, treatment and perceived risks, benefits and efficacy of action. This means that a comprehensive information approach includes not just content, but process considerations. Having information available through multiple sources in the care pathway; checking information needs at each contact point, and providing information in formats which can be used by the consumer at their convenience are ways in which information uptake and use is likely to be enhanced.

### **Consumer DI information should be available in a variety of formats targeted to consumers' and provider's needs and resources.**

Our study shows, as with other consumer health information areas, the referring doctor is preferred by consumers as the principal information source on DI. However, given consultation, resource and other constraints, this information is mainly given verbally, and not often supported by interactive checking of the consumer's understanding and knowledge; or by written information or referral to other information sources. Consumers gain further information from DI practices, but this is also predominantly verbal, limited in content and may only occur at the time of presentation for the test. The inherent risk in verbal information is that of inconsistency - in content, provision, and understanding – and consequently less than adequately informed and prepared consumers.

Verbal information at the time of consultation is known to have limited recall; recall is enhanced by the opportunity to engage in a dialogue; and providing pathways to written and further information resources also increases knowledge and retention.

While many consumers in our study reported verbal information sufficient, a significant number wanted written information to be supplied as well. Both staff and referrers also show a preference for verbal information, but also strong support for written resources including those that can be produced from the provider's desktop software. For referrers this is ideally linked to the DI request software and forms, offering a seamless process of both test ordering and consumer information provision. The high value placed on linguistically appropriate, culturally competent verbal interaction between consumers and their healthcare providers emphasises the need for any written materials to form part of a transaction between consumers and their healthcare providers.

### **Consumer DI information needs to be evidence based and accredited**

Numerous studies have shown the evidence and quality gaps in consumer information published on the Internet and this is also true for many DI websites. Our research in this study shows a low use and preference by consumers for web-based DI information, even though it is somewhat more favoured by providers. The importance to consumers of authoritative, reliable and transparent information sources is highlighted by the very high preference of consumers for face to face information from their referrer, and for information from the DI practice.

While many DI practices provide a range of written resources, content and formats may vary between practices. It is appropriate that the College as the peak professional body, take the lead in recommending and regularly revising information content for use and adaptation by providers, and use by consumers.

There is scope for deriving benefits to the DI profession and its services for improving consumer awareness and informed choice: unrealistic expectations of DI outcomes could lead to inappropriate demand resulting in harm, dissatisfaction and unwarranted costs, but on the other hand appropriate information targeted at a level which reflects consumers information needs and delivered at the appropriate time in the pathway of care can itself contribute to the quality and appropriateness of health care. Accountability, service

standards, continuous quality improvement and benchmark reporting are facilitated by informed consumers.

Information alone will not change the way the public, health professionals, and policy makers interact. Incorporating decision aids into routine practice in busy medical establishments is difficult, and health professionals may resist attempts to offer patients information and choice<sup>3</sup> However, providing clear information on treatment choices and thus emphasising the importance of patients' goals and values is a first step. Greater patient participation in decision making requires new and integrated information tools and training of health professionals so that it enhances the health system's capacity to provide high quality, culturally competent and linguistically appropriate health care to an informed public.

## Stage Two Results

In addition to our own findings from the earlier Phases of this project, the reports of two other concurrent QUDI projects have direct relevance to the process considerations for Stage Two of CS4. These two projects are: *QR1 - Scoping study of e-health in Diagnostic Imaging*; and *QR3.i - Review of Diagnostic Imaging Requests*.

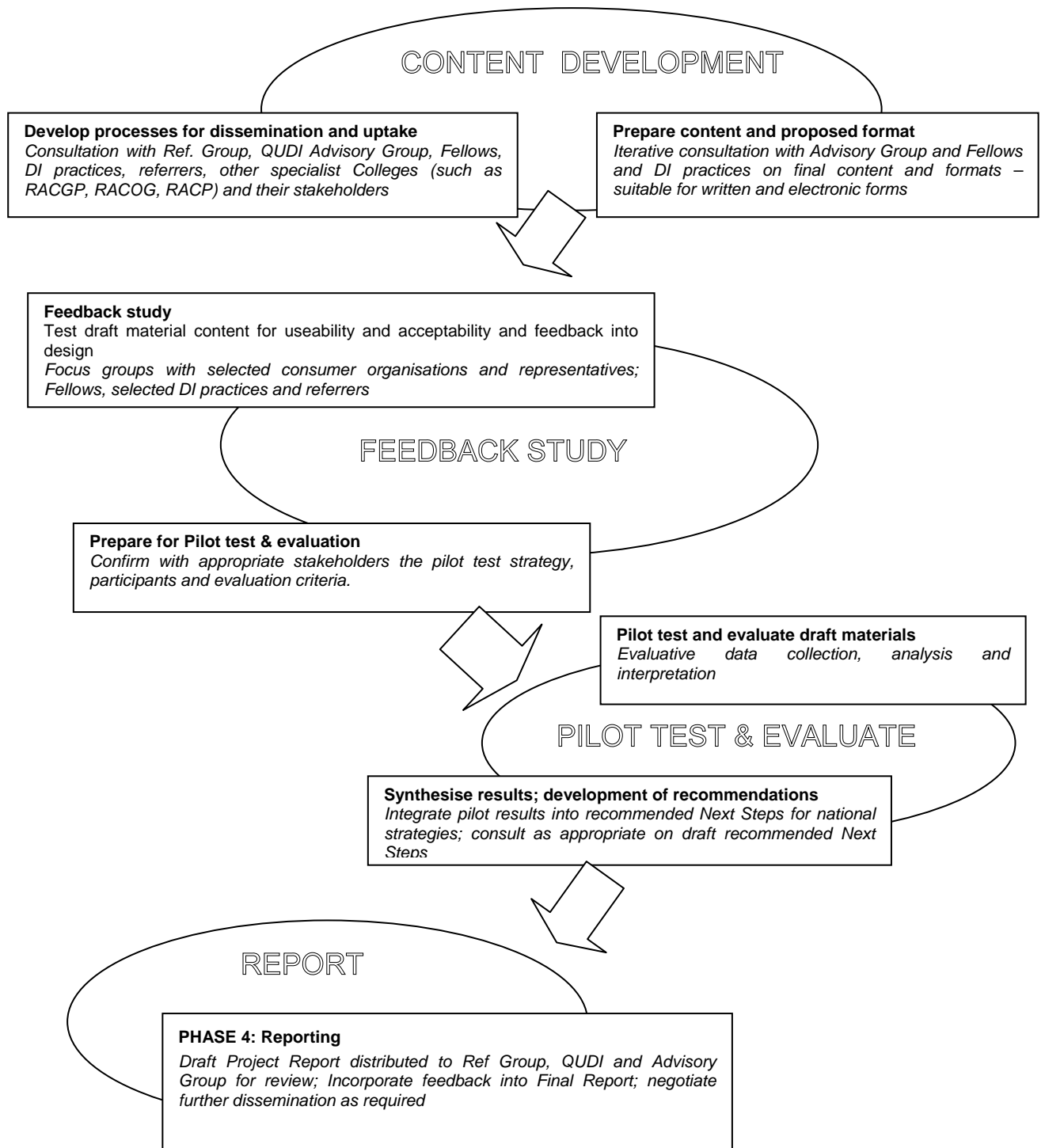
The report of *QR1 - Scoping study of e-health in Diagnostic Imaging* identifies the impact of electronic information management on DI work processes including their intersection with referrers and the potential for quality improvement. The report of *QR3.i - Review of Diagnostic Imaging Requests* provides a contextual framework of referral practice and confirms factors impacting the efficiency and quality of referral processes, including electronic DI referral systems. The Consultants took these reports into account in structuring the pilot testing of draft materials.

*QR3.1* identifies two likely repositories of consumer DI information that healthcare service provider systems will be expected to interact with, access and retrieve information which relevant to the DI request. One such repository is within the radiology service provider, and the other within information source providers such as Colleges, peak bodies, government health agencies. The potential exchange of information between the requestor and these repositories might include information about the selected DI protocol, preparation, and cost.

The design and processes followed for Stage Two of CS 4 thus reflected the outcomes of Stage One and the understandings gained from these concurrent QUDI projects.

The key research and development issues for Stage Two were identified as: *infrastructure issues* such as the consistent availability of validated, comprehensive and current consumer DI information resources; and the capacity of DI and referrer practices and systems to access and provide appropriate information as required by consumers and providers; and *process issues* such as effective strategies for identifying and responding to the information needs of consumers receiving DI services; and providing information resources at referrer, DI practice and national levels.

The design of Stage Two thus incorporated strategies to address these key issues. In brief it included a strategy to develop content for consumer information materials that could be tested with consumers, DI staff and referrers; a feedback study to test proposed content for useability and acceptability; a pilot test strategy that would be acceptable to participating DI practices; and a process of verification of interpretations and draft recommendations to the College. This strategy is diagrammatically represented overleaf.



The following section of the Report details the processes and results of strategies to action these learnings.

### **Development of Draft Consumer Information Materials**

In the earlier Stage of CS4, consumers, referrers and DI Staff had expressed shared preferences for DI information content. Consumers also expressed strong preferences for receiving information about DI from the referring doctor at the time of making the request. All stakeholders recognised the role of DI practices in the provision of consumer information, as well as that of the broader health environment including consumer and community organisations (especially those with consumers who are high users of DI, or have specific information needs due to language or culture), government and other authoritative information providers.

Consumers were clear that provision of written information regardless of source, should not supplant the dialogue expected as part of their consultation with their referring doctor. A common suggestion based on other consumer information strategies is to include prompt questions for both consumers and providers to use in checking information needs and understandings, and this is particularly important for people from non-English speaking backgrounds – especially where such information might prompt consideration of the use of interpreters.

Formats for presentation of consumer DI information were also evident: written materials such as fact sheets or brochures, portable document format [PDF] versions of these materials residing on appropriate websites accessible to consumers and providers; and links within medical software programs to consumer DI information were identified. These were expected to accommodate a range of factors considered likely to impact access, provision and use of consumer information. These factors included characteristics inherent in the referral and diagnostic imaging practices (e.g. physical location, nature of the referral stream, infrastructure (including computerisation); cultural and socio-demographic characteristics of the consumer population, including consideration of health beliefs and health literacy; attitudes to and expectations held about consumer information by all stakeholders. These factors all required consideration in the development of appropriate consumer information materials and modes for dissemination.

The starting point for development of the materials was the expressed need for consistency and simplicity across materials, the requirements of accuracy, currency and authenticity, and the suggestion from consumer participants for the inclusion of prompt questions to facilitate exchange of dialogue with their providers. Also under consideration was the need to accommodate practice-specific consumer information requirements, as well as any standards relating to provision of consumer information, such as College accreditation requirements.

The prospective information sheets would need to be capable of being adapted for local use by DI practices and referrers, and to address more specialised and complex information and process needs, such as when intended for people using languages other than English, people of different cultural backgrounds, those with disabilities and particular demographic groups such as young and older people. Formats for presentation would need to include consideration of electronic and paper delivery, stakeholder preferences and logistic issues, including dissemination and uptake.

To expedite development of an information template that would facilitate standardisation, the Consultants (with the approval of the College) focussed on the development of written information sheets for four of the most frequently requested DI tests – X-Ray, CT Scan, Ultrasound and MRI. These were envisaged as simple, plain English fact sheets covering key topics (as reflected in the Stage One findings) and relevant to each modality. To ensure credibility and acceptability, the materials would be consumer-tested for the quality and meaning of information; follow a College process to authorise, accredit, and ensure currency of the information; and be tested in real practice settings.

Informed by the expressed needs and preferences of the key stakeholders in the earlier stage, an iterative process of content development and refinement based on feedback was undertaken.

Consumers had expressed their preference for information about purpose, preparation, processes, length of time for test, risks, benefits, limitations, costs, role of DI staff and DI practice accreditation, and DI staff and referrers agreed on the need to provide information addressing these issues. The earlier research with consumers and consumer groups had revealed a common set of questions consumers pose when thinking about their DI request, and indicated the order in which these questions occur to them. Accordingly the Consultants designed a set of eleven questions based on the consumer questions, that could form a minimum content set and that would facilitate standardisation of presentation across different DI modalities.

The questions are:

What is a [name of requested DI test]?

How do I prepare for a [name of requested DI test]?

What happens during a [name of requested DI test]?

Are there any after-effects of a [name of requested DI test]?

How long does a [name of requested DI test] take?

What are the risks of a [name of requested DI test]?

What are the benefits of a [name of requested DI test]?

Who does the [name of requested DI test] and report?

What are the costs of a [name of requested DI test]?

Where is a [name of requested DI test] done?

When can I expect the results of my [name of requested DI test]?

In addition, a statement about 'Where to find further information' and a brief description of the practice of radiology, who a radiologist is, and the role of the College was included.

These questions were confirmed for their acceptability with focus groups of consumers.

Content under each heading was initially synthesised from contemporary descriptions of the relevant DI modality. These descriptions were drawn from a broad selection of contemporary published sources, including documentation from specialist medical colleges in Australia and overseas; government and non-government health information websites including DI practices in Australia and overseas; in authoritative publications and research centre monographs; in library resources. This resulted in fairly technical descriptions that were then carefully reconstructed in simpler language, resulting in descriptions that were considered to be 'user-friendly' and understandable.

An important consideration in construction of the materials is its readability and comprehensibility. Readability of the draft materials was determined using established algorithms designed to indicate how difficult a reading passage is to understand. Two such algorithms were applied to the draft information – the Flesch Reading Ease Score [FRES] is used to indicate the ease of reading on the basis of the number of syllables per word and words per sentence; the Flesch-Kincaid Grade Level [F-KGL] is used to indicate the level of education likely to be required in order to read the information, based on the average sentence length and average number of syllables per word]. The FRES formula results in a reproducible and predictable score in the range from zero to 100, with higher scores signifying greater reading ease. A 'plain English' score of 65 has been identified by FRES's author.

Scores on the tests are regarded by the tests' author<sup>4</sup> as indicative only; however they do provide an indication of whether the content is constructed at an appropriate level for the intended audience. Readability can be significantly affected other factors, such as reader's interest<sup>5</sup>, font size, density, colour<sup>6</sup>, and format and appearance including illustrations, sentence length and conceptual density<sup>7</sup>). It is important to note that in the current project, comprehensibility will be more closely assessed in the pilot testing stage.

The draft test sheets were assigned FRES scores between 50 and 70, which falls in the 'plain English' range, and F-KGL scores that indicate there is a good probability that readers with 8-9 years of schooling will find the content easy to read. Comprehension and understand ability of the proposed text were assessed in the pilot test stage.

The draft materials were subjected to an iterative review process, in which the advice of the College Fellows, the Modality-Specific Technical Reference Groups, the CS4 Project Reference Group, and other stakeholders including advice from DI practices, was sought. The Consultants recommenced contact with the Phase 2 DI practices that expressed an interest in ongoing participation in this project, in order to seek comment from them on appropriate content for materials and a strategy for pilot testing and evaluating the proposed Consumer Information materials.

### **Focus Groups**

As this advice was received, the draft materials were revised accordingly, and when completed, were subjected to a Focus Group feedback activity as defined in the Work Plan for Stage Two. Organisations that had participated in Stage One focus groups were re-contacted and invited to contribute to the Stage Two activity. The Focus Group activity in this Stage was primarily intended to gain an understanding of the useability and acceptability of draft materials, from the perspective of each participant group. This understanding added to the utility and validity of materials that were ultimately pilot tested.

The initial layout of information for each modality was as a three column brochure – enabling a single sheet to be folded into a convenient and manageable form to hand to consumers. Early feedback from consumers in the focus groups was supportive of a brochure-style layout; however it became apparent that there were some significant limitations to this style.

The first limitation related to the limited space available for information. This challenged the inclusion of sufficient information to address the questions consumers wanted answered in the information materials. Truncating the content to match available space ran the risk of reducing its understandability. Space limitations were also exacerbated by the intent to include appropriate illustrations at key points in the text. Limited space also limited the capacity of DI and referrer practices to include any practice-specific information they wished, and since these were both understood to be the major vectors for dissemination of the final consumer DI information material, it was important to allow space for these inclusions, should the practices adopt these information sheets.

The second limitation to the brochure style was related to the capacity of practices to produce materials at the point of referral or service provision. To accommodate the information required as the 'minimum set' identified by all stakeholders in Stage one of this project, brochures would require printing on both sides, or require two or more pages. In addition, inclusion of relevant illustrations meant that these would have to comprise line diagrams not pictures, since reproduction at practice level was unlikely to be high quality and capable of tonal variations. The printing capacity of practices is understood to be highly variable, depending on computing and printing systems already in place.

The third limitation to brochures was expressed by consumers in the focus groups. Their view was that receipt of an illustrated folded brochure at the time of request, a time already acknowledged as one of limited scope for further enquiry, as well as a time of heightened anxiety, ran the risk of the intent of the brochure being misconstrued – as something akin to

'advertising for the practice'; or 'intended to be read later' – and being taken and put aside, but in reality, other priorities intrude so 'that it is not read at all'. These participants reflecting on other formats for consumer information they had received, noted that plain type, no diagrams, and single sheets prompted a 'more serious' intent of the material, and that the emphasis on the 'question and answer' style adopted in the draft brochure would lend itself to at the least quick scanning at the time of receipt. This they considered would be more likely to prompt discussion with the requesting doctor.

In their view, the simple presentation following a question and answer format was more user-friendly and convey a greater sense of importance to the content, than the same material formatted as a brochure. They considered illustrations might be more appropriately included in supplementary materials such as web-based sources and that might also enable interactive displays (such as the Royal College of Radiologists' 'Virtual Hospital' site<sup>3</sup>). This is the format that was selected for the pilot test.

Feedback from the College reviewers, and the CS4 Project Reference Group also contributed to the content for pilot testing. An inclusion on the pilot materials was a short explanatory note on the 'cover' of the pilot test materials, which advised the participants in the pilot test about their involvement, instructions for response options, and suggested prompt questions in making their response. Another inclusion was a brief description of the specialty of radiology, radiologists, and the College.

A sample of the draft material used in the Pilot test is included in Appendix D of this Report. The actual information sheet was formatted as a two column, double-sided single A4 sheet.

## **Pilot testing**

To facilitate appropriate pilot test and evaluation activities, the assistance of two major DI practices - one public inner metropolitan and one private regional – was sought. These two DI practices were included as the Practice Manager of one and the Director of the other volunteered to participate in the pilot, based on the presentations from the Consultants at the College Research Seminar in February 2006. As reported earlier, their advice on the structure, conduct and evaluation of the test was included in the final test strategy.

The Diagnostic Imaging Department of the public metropolitan hospital currently provides X-Ray, Ultrasound, and CT Scan services across the hospital's catchment area. It has an active referral base across the hospital, a specific high referral stream from one specialised internal medicine research and teaching unit in the hospital, and also from a linked group of private practice suburban GPs. The hospital itself has over 300 beds, dealing with over 36,000 admissions per year, including over 20,000 day patients and over 500,000 outpatients. The Director and the Diagnostics Manager indicated the DI Department's database of requesting doctors currently numbered 200.

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<sup>3</sup> Royal College of Radiologists Virtual Hospital Departments. RCR website: <http://www.goingfora.com/> accessed 18/05/07.

The DI Department was in the process of installing its first MRI scanner, and at the time of this project was commissioning this part of the service. The Director of the DI Department was particularly keen to include the draft consumer materials on MRI in the pilot, since this was seen as a significant information need at the Department.

The second DI practice - the private regional practice based in regional NSW – comprised several practice locations in the region and offering an independent comprehensive DI services to the regional hospital as well as a combination of solo and group practice General Practitioners widely distributed throughout the catchment area. The current database of doctors referring to the DI practice includes 450 practitioners.

Feedback from the DI Practices indicated that the quality of referral requests and the level of knowledge demonstrated by consumers making their appointments for the requested test was highly variable. Some requests were so general in nature and lacking supporting clinical information, so active follow up by the DI practice was required to ensure the correct test was performed. DI Practices noted that it was common for consumers to not know what test they were to have (other than “a scan”) or indeed what body part was to be imaged. This meant considerable rework on the part of DI practice staff to clarify with both the referring doctor and the consumer, the nature of the request being made. From the perspective of the DI Practice, provision of standardised information by referrers to consumers would be likely to assist the clarity of the DI request.

At the initial meetings with the Directors and Practice Managers of the two participating DI practices, the draft materials and ways of including these in the practices’ information processes were discussed, to ensure a close fit of the test materials within the current information delivery and referral processes at these practices. These discussions also reflect our understanding of the findings of other QUDI projects - *QR1 - Scoping study of e-health in Diagnostic Imaging*; and *QR3.i - Review of Diagnostic Imaging Requests*; as well as our learnings from the earlier Stage of CS4.

The pilot test phase was initially scheduled to commence in late October 2006, and this period had been canvassed with the two participating DI practices. In early October the Consultants received advice that the two key on-site champions were unexpectedly going to be absent during the scheduled pilot test period, and it was thought this might inhibit successful engagement of their clinicians and referrers, since the DI Practice was to be the vector of invitations to their referring base.

In addition, commissioning the new MRI unit at the public hospital was delayed and was expected to be completed by February 2007. While it was possible to structure the pilot at this site in two parts – with the information relevant to X ray, CT and Ultrasound being tested in the scheduled period, and that for MRI being tested once the new MRI unit was on line, this did present some significant re-work for the Practice, the referring doctors, and the project Consultants. Splitting the test into two parts also ran the risk of creating ‘test fatigue’ in the referring doctors as well as within the DI Practice itself.

Given these two factors, so a decision was also made to try to coordinate the testing of all consumer information materials at the one time – when the DI Practices' key champions for this project were present, and the new MRI Unit had been commissioned. With the approval of the College, the pilot test was scheduled to commence in March and complete in April 2007.

Written invitations and project briefing materials were sent directly from two participating DI practices to all the doctors on their referrer database. The private practice distributed 209 invitations; the public practice distributed 200. The invitation included a covering letter from the Practice Manager and/or Director of the facility encouraging the referrer to participate. A brief one page project description, the purpose of the pilot test, the requirements for participation, the CPD point incentive, the processes for obtaining feedback were included in the briefing materials. Interested referrers were invited to contact the project Consultants directly with any queries about the project or participation in it, and confirm their attendance at the two scheduled workshops. The DI Practices considered a period of four weeks from the invitation date for referrers to respond would provide doctors with sufficient notice to consider their participation. Two other DI practice groups contacted the consultants expressing an interest in participating in the pilot test but not during the current project period.

Eleven GPs and 1 specialist contacted the consultants, and after discussing the required commitment, 7 GPs and 1 specialist agreed to pilot test the information sheets in their daily practice. All but one of the participants was from the regional DI practice area. Three GPs included distribution of the information sheets throughout their multi-doctor practice.

Participating doctors took part in structured discussions prior to and after the pilot test and also completed a questionnaire evaluating the effectiveness and impact of the pilot test activity.

Seven doctors were provided with a set of printed information sheets; one used electronic PDF files only and one multi doctor practice used both paper and PDF files. Electronic PDF files were able to be placed on all computers used by the consulting doctors and on practice staff computers, placing links on the computer desktop. The paper sets of information sheets contained 50 X-Ray; 30 Ultrasound; 30 CT Scan; and 20 MRI information sheets, the numbers reflecting the preferences of the participating doctors. All doctors also received a written instruction sheet outlining the process for distributing to consecutive referrals over a 4 week period, and providing feedback. At the end of the pilot test period all practices were asked to withdraw the materials from circulation.

Each information sheet for consumers contained an explanation of the purpose of the pilot, its authorisation by the College and an invitation to the recipient to provide their feedback in one of three ways: to the referring doctor; to a toll-free telephone line or through a web-based response form. Participating doctors estimated that 300 information sheets were eventually distributed, with modality proportions and referral volumes consistent with national data described earlier in this Report.

## **Evaluation**

The evaluation of the pilot test materials was framed around the criteria, including process and impact issues that had been identified in the approved Work Plan for CS4. The Project Reference Group, QUDI Program officers, and representatives of the College were also invited to provide advice on the pilot testing and evaluation criteria, and likely participants.

Baseline, process, impact and outcome indicators were defined. These were adapted to suit the stakeholder group.

Baseline data for participating DI practices and for participating referrer practices provided the context for their involvement in the pilot test. Baseline data for consumers related to their information experiences and needs. Data included an overview of the practice's current facilities; the range of DI tests provided; catchment characteristics; the number of referrers on the practice records; the number of requests for each modality; the number of encounters for each modality; the nature of current consumer information systems; practice responses to consumer information needs; and practice capacity to produce and provide consumer information.

Process indicators were focussed around the consumer and provider reactions to the test materials, including awareness of it; attitudes and responses to it (presentation, strengths, weaknesses, readability, comprehensibility); perceptions of content; authoritative nature of the information; and overall usefulness of the information presented.

Impact indicators were structured around consumer and provider views (independently obtained) of the test materials, including changes to knowledge and awareness of DI procedure requested; impact on subsequent behaviour such as reference to the test materials in the consultation process; and ratings of the quality of the information presented.

Outcome indicators were similarly structured around consumer and provider views, independently obtained of the role of the College-approved pilot materials as a primary source of consumer DI information; reported consumer use of this information source; requests for the supplementary information; any consumer behavioural change such as changes in requests for DI information from either the referrer or the DI practice; reported use of the information provided.

### **Consumer feedback**

Consumer responses were invited through alternative processes:

- Via an on-line survey available at [www.australiahealth.com](http://www.australiahealth.com) for the duration of the pilot test period. This web site also contained copies of the draft materials accessible to those who were completing the survey;
- Via comments and feedback to the referring doctor at subsequent consultation, and/or the DI practice where the testing was performed; site for completion of feedback;

- Via telephone using a Freecall (toll-free) 1800 number. Prompt questions were recorded for the 1800 number to allow automated response recording to take place should consumers prefer this mechanism.

Four responses were received on the telephone line; two responded via web feedback form. In addition, participating doctors reported that a number of consumers given the information commented at the time of being given the information sheet; and a smaller number commented on a subsequent visit.

The consumer response sample generally reflects the proportions and characteristics described earlier in this project e.g. 300 took the relevant DI information sheet; 1% responded directly to the project Consultants with their feedback; up to 5% engaged in further discussion on the information content with their doctor.

Consumers described the information sheets as easy to read and understand, and very useful to them. There were no negative responses received from consumers, although one noted that the content seemed rather basic and repetitive “like medicines information sheets you get these days”.

Consumer respondents to the pilot materials confirmed the conclusion drawn in Stage One: given the complex pathways consumers take through the healthcare system, the multiple points at which they might be referred for DI tests, the sometimes multiple providers they experience, information about DI tests should be available to them at multiple distribution points – from the referring doctors, the DI practices, and from other sources such as the College to the general public or through other stakeholders such as consumer organisations.

### **Referrer feedback**

Consistent with the findings in Stage One, referrers participating in the pilot test noted that appropriate, acceptable and readily accessible consumer DI information was difficult to locate. The pilot test results showed that time constraints are a major factor in limiting the provision of information in the referrer consultation, and the assumption of consumer knowledge may be less significant than the lack of easily available information resources tailored to practice, practitioner and consumer need. For example, doctors may not invite questions they do not feel equipped to answer, such as on risks, preparation and costs to consumers, especially for more complex modalities. Some referrers acknowledged that their own understanding of DI test procedures was limited, and this added to the difficulties they had in providing appropriate and accurate information to the consumers for whom they were requesting DI tests. The pilot test materials were considered highly acceptable to all the participants. The College initiative was welcomed, and seen as timely, innovative and helpful.

All but one doctor described the pilot test as valuable, interesting and well conducted. Only one participating doctor stated they would not use this information in practice. It was seen as of no benefit to GPs, a low level of information and too onerous to give in practice. This

doctor felt that DI practices should give this information out - "don't lay this on GP's – we don't want it"

Participating doctors welcomed the availability of the information sheets and this was supported in comments by a number of their practice staff. Several practices noted their interest in providing information of this kind to meet consumer needs and expectations for information. One noted that it was "long overdue, given people are being referred for more tests these days". Referrers indicated they would be highly likely to use the consumer information once it was made generally available. Participants suggested that GPs themselves need training and information on the use of DI modalities, which can assist them in advising their patients. For example, it was noted that many GPs trained before CT scans achieved their current prominence.

They reported the information sheets were accepted without demur by most consumers offered them, and participating doctors described the reaction of most as interested and responsive to the material. Those who declined the information were usually ordered common tests such as X-Rays and/or had experience of prior testing.

Participants noted that consumers often don't ask questions, especially common ones; this information can help those people. Written material is useful to prompt people's thoughts and to take away and refer to in their own time. The format using questions and answers was seen as useful to structure the information; a number of referring doctors noted that when given the information sheets, people seemed to quickly scan the headings for essential information.

In a small number of instances, consumers asked questions within the referring consultation, while a few returned with an additional enquiry, particularly about risk factors. The most common risk enquiries were about radiation exposure and allergies.

The majority of doctors preferred distribution methods which would offer information to all patients. This avoided an additional decision making process in the consultation to identify those who may need information and those who don't. Several doctors expressed a preference for giving out the information without prompting discussion, principally because of time constraints. There were a range of views on where the distribution point for information should thus be: presentation for self-selection in the waiting room or by the receptionist or practice nurse (using either paper or electronic generated material) was seen as less likely to prompt extended discussion in the consultation time period. Some doctors favoured the information sheets being distributed from the referrer desktop.

All participating doctors canvassed the idea of information being placed either on the referral form or associated in some way with it. While they recognised space constraints depending on paper formats, this was seen as a way to convey essential instructions such as preparation requirements, with additional information being available through supplementary sources, such as websites and DI practices. It was acknowledged that a limitation to information being contained within the referral form is that the form itself is usually handed

over to the DI practice at the time of the test service. This means the information is no longer available to the consumer.

Other ideas included a card or sticker referring to central website; or for more complex tests, the use of DVDs that illustrate the information.

Additional ideas were proposed, derived from experience with other specialist services such as surgery and gastroenterology. Consumer information about aneurism provided by the Royal Australian College of Surgeons has a peel-off sticker which can be placed on the patient record to show that consumer information has been given; while some gastroenterology practices provide a comprehensive information kit of scoping procedures that is well regarded by GPs and their patients.

Preferences for the physical format of consumer information depended on the local practice resources. While two of the pilot test practices used electronic PDF files on practice computers to generate the information sheets, most participating doctors favoured the use of paper hard copies. Some solo GP practices acknowledged they currently have limited computerisation, and thus their capacity to generate printed material on site was considered by them to be limited. These practices would prefer to receive pre-printed consumer information materials at this time. Participants noted that current practice software can be difficult and slow to access and produce information resources for printing. This is due to varying technology capacity in practices and to consultation process constraints such as moving to screens and menus to find consumer information.

The credibility and currency of information materials available to provide to their patients is important to referrers, as it is to consumers receiving it. The RANZCR-endorsed pilot test materials were viewed as having both credibility and currency by virtue of the College imprimatur. Referrers were of the view that finalised versions of materials should continue this endorsement. This would provide the referrers with assurances about accuracy, review for currency, and objectivity. Referrers considered that the test materials could be translated for culture and language-specific group.

The workshops generated some useful reflection about the content of the pilot information.

Participants noted the advantages of US and MRI as being radiation-free and suggested this be specifically stated in consumer information for those modalities. Some participants advised that allergy information should be more specific e.g. if you have a known allergy to iodine or previous exposure to contrast. In a few instances in the pilot test, the allergy statements prompted broad discussion about unrelated allergies such as to shellfish, and it was felt that more specific reference may avoid time-consuming discussion.

Cost information was noted by several participants. The information sheets direct the consumer to ask the referrer and the DI practice for cost information but it was reported that most referrers do not know this information. It was felt that if this prompt to ask the referrer was included, cost and price guidelines from the DI practice to the referrer would be helpful.

A similar view was expressed about the prompt to ask the referrer about special preparation for tests. If this remains as part of the consumer information sheet, additional information from the DI practice on key preparation requirements for common tests would be helpful. One participant suggested that the information prompt suggesting the consumer may need to make an appointment to discuss the test results with the referrer should be more positive i.e. recommend the results be discussed with the referrer rather than making this optional.

Participating referrers reflected on their practice demographics, and the types of DI tests they more commonly requested. Some practitioners work within practices that have a specific population focus – such as women’s health – and this indicated some more specific information needs addressing the issues for women undergoing more intrusive DI tests, such as vaginal ultrasound. It was felt that the Ultrasound information sheet in the pilot test was insufficiently specific to prepare women for these tests and that there is a need for a specific information sheet to be developed which is tailored to this test group. One of the few specialist referrers participating in this pilot – a cardiovascular surgeon, indicated that there were similarly more specialised information requirements for relevant DI.

Discussion also identified a concern that female consumers referred for invasive testing should have information about choice of DI technologist gender. Most referrers were unaware of the discomfort expressed by consumers about this. The exceptions were where practices had a predominant focus on women’s health, or the practice population was multicultural. The referrers acknowledged that this might be an issue especially for women or for those from different cultural backgrounds. Current protocols seem unclear and variable and participants would welcome clear guidelines to inform their patients about gender choice of technologists.

The existence of a set of information that is generally applicable to many DI tests, and whose absence is a cause of consistent concern to consumers, was discussed with the referrers. Consumers had indicated to the Consultants that receipt of information addressing these specific concerns was not a common experience. Many consumers related the absence of being asked for explicit consent, including financial consent or consent for the administration of contrast media, despite their expectation this would occur (largely based on their experiences in other aspects of their health care). Despite an ostensible commitment to obtaining informed consent, in reality for consumers, this was not a universal experience.

Likewise, consumers reported that a significant issue for them was related to radiation exposure. This was true for those who have chronic health problems that require frequent or regular imaging, those who undergo multiple modality tests as part of their diagnostic workup, or those with children who are undergoing the tests. Consumers who fell into these categories reported that there was little authoritative information available to them, in language they could relate to, that addressed their concerns. In their experiences, such information was neither volunteered by the requesting doctor, nor the DI practice. Referrers participating in this pilot test noted the most common concerns expressed by their patients about DI testing relate to radiation risk. These practitioners acknowledged their own uncertainty about this and recognised the difficulty in attempting to explain such risk information when they don’t know this information themselves. They indicated their desire to

have available to them some salient information they could share with their patients. A position statement from the College about radiation risk was seen as a potentially useful tool.

The conclusions drawn by the Consultants and supported by consumers that specific, separate statements about informed consent, use of contrast media, and radiation risk, should be made available to referrers and to consumers, were supported by these referrers. These statements should originate from the College in order to convey the same authority, currency and credibility as the pilot test materials attracted.

Referrers reflected on their own positions about provision of information to consumers for all DI modalities. Some referrers considered that consumers do not need or require any information about commonly performed DI such as plain X-ray. This lack of need was seen as a result of pre-existing knowledge consumers have about these types of DI – largely gained from the length of time the tests had been available and used within the community.

This is contrary to the views expressed by consumers in our Stage One research. In that research, consumers were clear that information for all imaging modalities should be available to them. They reported that they sometimes felt that the referring doctor made assumptions about their level of knowledge that were not verified; that the constraints of the consultation environment made it difficult for consumer and referrers alike to request that information, or validate those assumptions; or that cultural or other factors sometimes inhibited the ready exchange of information.

Consumers were clear: their preference and need was for information about all DI modalities to be made available to them, regardless of whether they had previous experience of the particular test. They indicated that for some consumers a simple check of whether they required any information about the requested DI test might suffice, but for others, routine provision of the information would be desirable.

When this was discussed with the referrers in the pilot test, they concurred. General Practitioner referrers considered that the time-related nature of their practice environment would support this strategy, and rather than trying to determine which of their patients might require information about the requested DI, it would be more efficient to provide it to all for whom such requests were made. Specialist referrers participating in this pilot reported this to be the case in their practices - information provision was an embedded systematic part of their consultation processes, and its provision was recorded in the files.

## **Limitations**

There are a number of sampling limitations to the pilot test data which are acknowledged by the Consultants.

The first relates to the low uptake of invited doctors to participate in the pilot despite the attempts to facilitate this. The availability to participating GPs of 30 of the highest category (Category One) CPD points was not in itself sufficient incentive to participate. At the

conclusion of the pilot test period the Consultants were advised that the CPD program was at the end of its triennium of points allocation and most GPs have already completed the professional education requirements for this period. Anecdotal reports suggest this was an influence with a number of doctors indicating they would participate if the activity was run next year.

Another possible limitation relates to the structure of the pilot test itself. While this was crafted in consultation with the key stakeholders, and finalised with the referrers who had expressed interest in participating, those who did become involved commented that the test activities did require a time and professional commitment, including the need to focus on the activity, incorporate the materials into their practice behaviours, and record, reflect and report on its impacts and implications. A number of solo practice GPs reported it was difficult for them to attend the pilot test workshops and meet other practice commitments.

The location of the meeting venue for the structured workshops for the regional practices provided some access challenges to busy GPs practising in an area some distance from the location. While the venue was selected on the advice of the DI practice, and confirmed as a central location, some doctors who initially expressed interest in participation said they would attend if the meetings were held in other towns closer to their practice.

Participation in CPD activities clearly requires selection against competing alternatives. Both DI practices run other CPD and education activities for referrers and had done so prior to the pilot test. These were on clinical topics associated with imaging and were well attended. The dates for the workshops were carefully selected in consultation with the participating DI practices, and with reference to the local Division of General Practice calendar of activities. Despite this, it transpired that in the regional DI practice area there were some other meeting activities occurring on the pilot test meeting nights. Consumer information may not be a high priority issue to referrers against competing topics for professional education.

The nature of the invitation to participate in the pilot may not have conveyed the request clearly enough. The invitation was accompanied by a project briefing page, and the requirements for participation. Some doctors who did participate commented that it was not entirely clear to them what was expected, until they attended the first workshop. These doctors did qualify their comments with acknowledgement they had not read in detail the information provided.

Based on the advice received, and the design and finalisation of the pilot in close consultation with the key stakeholders, the Consultants had expected to engage higher numbers of participants in it, and gain opportunities for quantitative data analysis. The response rate however was insufficient to achieve this, but was flexible enough to enable the collection of detailed qualitative information from the participating doctors. The pilot test was valuable for learning about real-world application and distribution issues in the practice setting, providing a good degree of insight and richness. This insight is reflected in the recommended next steps for distribution of consumer DI information.

## Discussion

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While participation rates were low, the pilot test results indicate that the consumer information sheets are seen as a welcome development. Some practices asked to keep using the materials beyond the pilot test period, as they felt it filled a current gap in their information resources for consumers. All practice participants welcomed a national approach by the College to greater consumer information availability for DI testing.

DI practices, referrers and consumers participating in this pilot agreed that the tested materials provide a useful template as a source of consumer DI information. The tested materials, with some minor modification to reflect feedback in the pilot test, are seen as suitable for publication by the College as a national resource available to consumers and referrers. The materials could be locally linked to the generation of the referral form.

Assumption of prior consumer knowledge as a reason for not giving information in the referrer context may be less significant than the lack of easily available information tailored to practice, practitioner and consumer need. For example, doctors may not invite questions if they do not feel equipped to answer, such as on the costs of testing to consumers; preparation requirements, especially for more complex testing; and ways of addressing concerns about radiation exposure in DI testing. In addition, there is a need to develop some additional information statements on radiation risk in DI testing, informed consent; use of contrast media; and choice of technologist gender; and to develop a specific consumer information sheet on invasive Ultrasound testing for women.

The current DI referral environment is a mix of paper based and electronic information systems, mainly at a low level of information interoperability (as noted in QUDI project QR3i p. 38). The practice environment is complex and frequently time pressured, and introducing new or additional material or steps which extend routinised processes can be highly disruptive to workflow. This means that information resources need to be appropriate for a given practice environment and systems.

While national resources are supported and welcomed, there is a range of information which is locally specific, such as cost and preparation information for tests. Together with the local variation in referrer practice systems, this suggests an opportunity for local DI practices to adapt the nationally agreed consumer information content to reflect their local service provision and referrer preferences for materials formats and distribution methods.

These stakeholders also agreed that consumer DI information strategies should be supported by ongoing education activities – consumers and providers need to be aware of these, and the information preferences, needs and unmet needs of consumers and referrers alike. Provider curricula and professional development activities at local levels should include information about consumer information; consumer education strategies such as chronic disease management programs might also incorporate information about this.

The Consultants are sure that implementation will require the commitment of all stakeholders within a continuous quality improvement framework. There is good potential to align consumer information development with other consumer activities taking place within the College, such as consumer participation in and focus of the College Practice Standards, and other work in the QUDI initiative.

# Next Steps and implementation

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## Background

DI testing occurs to assist diagnosis and treatment options when a person is experiencing symptoms of ill health, or for population risk screening to more rapidly diagnose conditions such as breast cancer or for developmental assessment information such as Ultrasound in pregnancy. Some consumers have repeated DI tests, either as part of further investigation or for monitoring of confirmed disease, such as breast cancer, arthritis or heart disease.

For many consumers, this is an anxious time as they await clarification from the diagnostic test. In the current research, and in publications in the matter, high levels of 'State' (situational) anxiety have been found to be common among consumers having DI. This is related to health uncertainties, lack of information, discomfort of some DI procedures, and an unfamiliar DI environment. There is a reported association between anxiety and the stress of the process and dissatisfaction with the DI service experience. Where information is provided as part of a good supportive process, it is effective in managing anxiety.

DI testing is common in the Australian community. The nationally representative community sample of 2245 consumers obtained as part of this research project reflected these characteristics – 1645 (73%) reported receiving one or more of the modalities of interest in the 12 months prior to the survey. The numbers of tests reported and the usage patterns of DI tests closely align with published Medicare data. In addition to this sample, the views of a further 193 consumers were obtained through focus group, interview, survey and feedback strategies.

Our research shows that while a majority of consumers self-report a basic understanding of the uses of common diagnostic imaging tests, significant numbers do not know what they are used for. Consumers' self-rated knowledge of the risks and limitations of DI tests, at the time of the DI test, was low for all modalities.

Information provision to consumers about the requested DI test is variable across practices and referrers, as is when it is provided. Where it is provided, it is predominantly verbal information from the referring doctor, and provision of written is low overall. Between 43 and 52% of the surveyed community sample reported receiving verbal information at the time of referral for imaging tests<sup>4</sup>. Less than 25% of the sample reported receiving any written information.

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<sup>4</sup> Those reporting requests for cardiac angiograms were better off as far as receiving information: 63% of these consumers reported being given verbal information, and 47% of those who received mammography where 47% surveyed had received written information.

In the community sample, significant numbers across the DI modalities of interest reported receiving no information at all. This included 44% of those reporting X-Ray; 41% of those reporting CT scans, 36% of those reporting Ultrasound; and 34% of those reporting MRI. There is a clear information need in the sample: 63% of those having MRI; 59% of those having Ultrasound consumers; 51% of those having CT Scan; and 41% of those having X-ray reported they would have liked more information before the test

These findings were borne out in focus group discussions with DI consumers. Participants attributed the lack of information to time constraints in the consultation and an assumption made by the referring doctor or the DI practice that the consumer or their carer knew sufficient about the DI test and would ask questions if they needed more information. Participants noted that many consumers would feel constrained in asking, for fear of offending the doctor or appearing foolish.

Our surveys of 113 referrers, 97 DI practice staff and 2438 consumers identified strong support across all respondents for more information to be available to both referrers and consumers at the referral point, and at the DI practice. Consumers overwhelmingly preferred the referrer to provide the information, however also valued information provided by DI practices. The preference across all stakeholders for the content of this information was for a comprehensive range of topics about DI.

Information sheets were developed, reflecting the preferred content indicated by the earlier research. The sheets were tested with focus group participants for comprehension and understanding, and revised to reflect this feedback. The sheets were then reviewed by the College's Modality-Specific Technical Reference Groups and the Project Reference Group, and following subsequent revision, were pilot tested in a convenience sample of referrer practices.

The pilot test results showed that time constraints are a major factor in limiting the provision of information in the referrer consultation, but assumption of consumer knowledge may be less significant than the lack of easily available information resources tailored to practice, practitioner and consumer need. For example, doctors may not invite questions they do not feel equipped to answer, such as on risks, preparation and costs to consumers, especially for more complex modalities.

## **Next steps in DI consumer information content and standards**

The project has developed an information template which comprises eleven questions and two statements on the topics required to meet consumers' information needs in DI testing. Information sheets have been developed and tested for four modalities, proving model content in response to each question. The results of the pilot testing of the information sheets indicate these provide both the recommended content headings for consumer DI information, and model content which can be adopted by the College.

The College is seen by all stakeholders as the appropriate national body to authorise, endorse and make available the tested DI consumer information content. These information sheets could be disseminated by the College through its publication mechanisms for use by any stakeholder, including consumers, referrers and DI practices. To do so will require the College to establish ongoing processes for the development, publication and regular review of DI consumer information. As 'end-users' of this information, consumers and their representative organisations should be involved in the development and review of the information. These processes could be aligned to processes for consumer input into other College work programs such as its standards development processes.

**1: Develop and implement processes to produce, review, update, and authorise the College DI consumer information at regular intervals.**

**2: Review and adopt the tested consumer information as the College authorised DI consumer information.**

**3: Publish the authorised consumer information on the College website for viewing, download and printing.**

**4: Align the College DI consumer information activities with other College consumer activities such as standards development processes, to ensure ongoing development and review input from consumers and their representative organisations.**

The tested information content headings represent the minimum content that should be provided in DI consumer information. The College can encourage other DI information providers to review their current consumer information against these content headings. The College sets professional standards for radiology practice in Australia and could adopt these content headings as a recommended standard for DI consumer information in Australia to meet. Given its strong standing amongst its stakeholders, the College is well-placed to influence the information provision behaviour of its Fellows, referring doctors, and DI practice staff. Testing consumer satisfaction with the information materials provided would also help establish benchmarks for the subsequent review of the outcomes of these practice standards.

**5: Adopt the content headings of the project tested information sheets as the recommended topics to be covered by DI consumer information developed by other parties.**

## **Additional consumer information requiring development**

*Information for culture and language groups:* Limited survey and stakeholder enquiry among people of different cultural and language backgrounds suggested the presence of strong

cultural influences on understanding of the purposes, benefits and risks of DI testing; and a need for language and culture specific information.

The number and diversity of language and culture groups in Australia has led to the development of specialised public and non-government services providing translation and distribution support for culturally specific health information. It would be appropriate for the College to consider engaging the services of such organisations to adapt the project information sheets and ongoing consumer information resources for specific cultural populations.

During the project the Consultants also engaged with DI practices and health services in areas serving significant populations for whom English is not the first language. Consistent with our recommendation for local DI practices to have the option of developing their own consumer information resources meeting College standards, these services could also either adapt or develop consumer information relevant to their service population.

**6: Review and produce College-authorized consumer information for use by cultural groups.**

**7: Promote the development by relevant DI practices of culture-specific consumer information which meets College recommended standards.**

*Cost information:* A lack of clear Information about the costs of DI testing was identified frequently by all stakeholders throughout the project. The information gaps included identifying different patient eligibility e.g. bulk billing for concession card holders; differing referrer privileges such as GPs or specialists ordering tests; different costs associated with the location of service provision e.g. public and private services; and different eligibility by modality.

QUDI project QR3.1 reported that most stakeholders agree that choice of provider is important and ideally this is supported by an informed discussion between referrer and consumer at the referral point. Cost information is a necessary component of this discussion (page 46).

A key question is to what extent it is possible to provide generalised versus localised cost information. Informed stakeholders advise us that the current rebate provisions are complex and difficult to interpret and communicate to consumers. Despite this, we believe that it is important that continuing efforts be made to develop clear cost information for consumers in the development, maintenance and review of DI consumer information by the College and its key stakeholders.

**8: Promote further development of clear cost information to both referrers and consumers.**

*Information for women:* Through each phase of the project both referrers and consumers have identified information needs specific to women. This is particularly so in relation to vaginal Ultrasound examination, but has also been cited in respect of breast and pelvic area examinations. The tested Ultrasound information sheet was seen as too generic to meet the needs of women accessing invasive testing and it was strongly recommended that a specific information sheet for these tests be developed. Specialised breast screening services have developed information material tailored to their target groups and it was felt a similar approach, engaging women's health practitioners and community groups in the information development, would be valuable.

A second issue raised for women in this project was about choice of technologist gender in DI testing. Women in the focus groups, and several referrers in the pilot test, described concerns about presenting for invasive testing unaware that the technologist would be a male. It was felt that, at a minimum, DI practices should provide information about who will perform testing and where possible, a choice of technologist gender should be offered. The College was seen as the appropriate organisation to set standards in this area.

**9: Develop specific consumer information for women receiving invasive testing.**

**10: Develop guidelines for DI practices on choice of technologist gender for people receiving invasive or intimate DI testing.**

*Information about risks of DI testing:* Throughout this project, a number of consumer questions about the risks of DI were consistently raised:

- *Contrast media.* The tested information sheets provided a detailed statement about risks arising from contraindications and adverse reactions to contrast media. The pilot test found that this sometimes triggered a discussion with the GP about a wide range of allergies and sensitivities. Participating doctors noted that when ordering a test they usually have the consumer's record available and this is likely to flag known allergies and reactions. Given that contrast media is used across different modalities, it was felt that a separate, more detailed statement should be available to those concerned about contrast risks, and this would reduce the need for more detailed information to be in the modality information sheet.
- *Informed consent for administering contrast media:* Research and observation throughout the project suggests consumers are sometimes administered contrast media without sufficient prior information and, as a result, with limited opportunity to provide informed consent. Informed consent may not be sought at all in a number of cases, with consumers simply being asked some screening questions and administered the contrast media accompanied by a commentary of what effects should be experienced.

- *Radiation exposure risk:* This was the most common question raised by consumers in this project and extends to risks from both the immediately proposed tests as well as cumulative exposure from repeated testing. Pilot test doctors and focus group participants noted the advantages of Ultrasound and MRI as being radiation-free and suggested this be highlighted in that information. There appears to be limited understanding in the community about radiation exposure and risks and this extends to difficulty among referrers and providers about how to simply and effectively convey radiation exposure risk information. A number of participants in the project saw the College as the appropriate organisation to develop and disseminate an authoritative statement on radiation use and risks in DI testing.

**11: Develop and publish consumer information and/or position statements on the use of contrast media and associated risks; and informed consent for contrast media administration.**

**12: Develop and publish consumer information and/or position statements on radiation exposure and risk in DI testing.**

## **Multi-level distribution opportunities**

*National distribution:* Consumers can access information about DI in a number of ways. Most commonly and preferred is through the referrer. Secondly, information can be given at the DI service point. Thirdly, information can be made available through other health service settings, consumer and community organisations. Lastly, consumer information can be available at a general public level, for example through websites and the media.

The available timeframes for information giving and checking consumer understanding in the referral and DI service cycle are limited by a variety of process and practice factors. They are further limited by the lack of available resource materials which can be readily used within the practice and service contexts. Adopting a multi-level information strategy enhances the opportunities that consumers have to obtain information at a time when it is salient to them and in a way that they can attend to.

DI consumer information distribution should be enhanced and supported by active promotion and educational activities. At a national level the College can communicate the availability of their authorised information resources to key stakeholder groups, including health professional, service delivery and consumer organisations.

**13: Publicise the availability of the College DI consumer information resources to key stakeholder organisations.**

Given the background knowledge and frequency of DI testing across the community, it would also be worth considering some general media awareness strategies such as inclusion of the role and functions of DI in popular health programs on television. This could provide an opportunity for the College representatives to provide segments about DI modalities and processes. These information segments might be modelled on the College's popular 1995 X-ray information resource kit for primary and secondary schools<sup>5</sup> that was designed to help children gain a greater understanding of this DI modality. School curriculum-based initiatives are also included in other quality use programs, such as the Quality Use of Medicines strategy.

**14: Provide information to the general community about DI by College representatives communicating directly to the public through ongoing mass media opportunities.**

*Regional and local distribution:* It was recognised throughout the project that local variations in DI test availability, costs and test process requirements, coupled with the existing referral and information relationships between referrers and DI practices, make it important that consumer information be tailored to local circumstances. This presents an opportunity for localised consumer strategies to be developed by DI practices consistent with a national standards framework set by the College.

Providing consumer information through referrers will necessarily involve a mix of information formats. Our research findings reflect this, with some referrers preferring electronic production, and others preferring paper-based materials such as information sheets and brochures. While most preferred giving information from their desktop during the consultation, some preferred providing information through the practice reception or practice nurse using electronic files, paper stock or photocopying as required from a resource book.

This could be achieved in several ways: by DI practices drawing on the authorised College information sheets and making these routinely available to local referrers and consumers; by adapting the College information content to reflect local variations and circumstances; or by developing original materials, consistent with the College approved versions and addressing each of the content headings. In each case, consideration should be given to how the consumer can obtain the information at the referral point and also through subsequent contact with the DI practice. This may involve placing prompts within the DI referral form, providing electronic or paper resources to be used by referrers and their staff, and ensuring that consumers' information needs are confirmed at the time of test booking and presentation.

The combination of nationally available College consumer information and local versions consistent with national standards will help distribution and availability of consumer DI information at the referral and service delivery points.

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<sup>5</sup> RANZCR (1995). *X-rays – the INSIDE Story*.

**15: Work with DI provider organisations to review, produce and distribute local DI consumer information which meets the College's recommended topic and content standards.**

At local levels many DI practices provide continuing education activities for their referrers and their own practice staff. It would support the use and uptake of consumer information if appropriate activities regularly incorporate some consideration and discussion of the consumer's information needs in the referral and testing processes.

**16: Encourage College Fellows to use local educational activities engaging medical communities to consider addressing consumer perspectives, and the opportunities for giving information at referral and DI service points.**

Given that medical practices of all types constitute significant services in the community, there is also the opportunity to provide information about DI testing to the general community through such activities as facility open days and health events.

**17: Encourage College Fellows to use local opportunities such as community health events to promote consumer information about DI testing to their communities.**

*Including DI consumer information in referrer systems and standards development:* In diagnostic imaging, as with pathology and medicines prescribing, referrers are trending toward electronic completion of forms. However, as QUDI project QR3i has noted, the current DI referral environment is a mix of paper based and electronic information systems, mainly at a low level of information interoperability (p. 38)

We do not see it as the task of the College to address deficiencies in the broader information-giving practices of referrers, but providing information to consumers by their treating doctor is part of a wider medical practice development issue and the subject in effort in other referral and treatment activities, such as pathology requests and medicines prescribing. The College should capitalise on its position as the standard-setter in radiology practice to influence the relevant policies and processes within other professional groups.

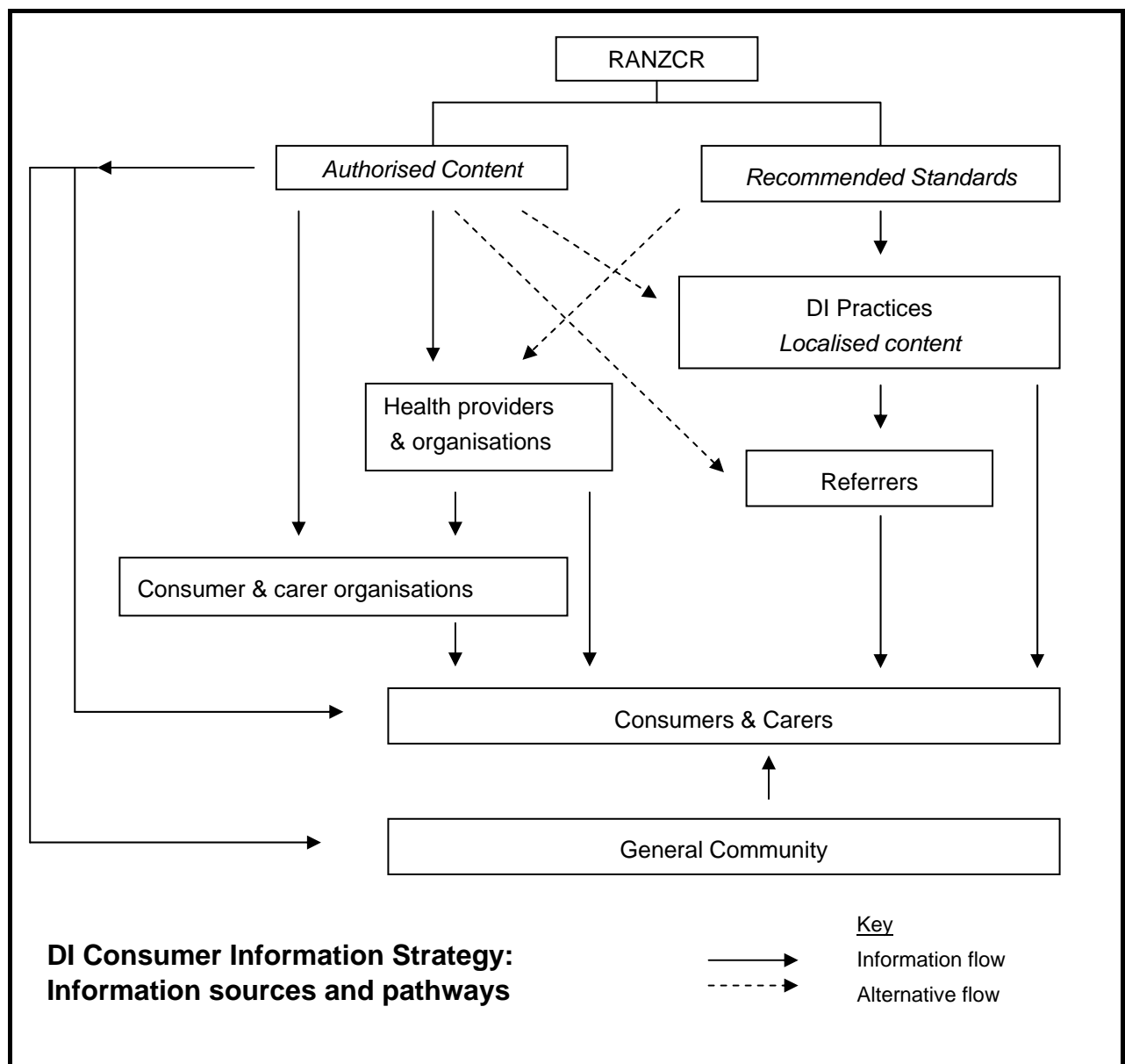
A range of strategies are already underway through programs such as the Quality Use of Medicines and Quality Use of Pathology, which show factors in common with this project, such as electronic prescribing and the development of consumer information resources. More broadly, the role of informing consumers is a recurring theme in advances in safety and quality in health care and the attainment and maintenance of practice accreditation. This environment provides an opportunity for the College to work with GP and specialist

representative organisations to ensure that DI consumer information strategies are considered and incorporated into ongoing practice development.

**18: Develop working arrangements with the RACGP and general practice organisations to ensure DI consumer information is considered as part of broader consumer information strategy development within general practice.**

**19: Develop working arrangements with other specialist colleges and related medical organisations to ensure DI consumer information is considered as part of broader consumer information strategy development.**

A possible model for the distribution of consumer information is shown below:



The information strategy proposes that consumer information be made available at multiple community and organisation points of delivery, increasing the likelihood that consumers and carers will find information at a time at which it is relevant to them.

It addresses the project findings that no one source will be a consistent and reliable distribution mechanism for DI consumer information. It is also consistent with a social marketing and population health approach, providing information at broad community levels, reinforced by further presentation in provider and health system interactions with consumers.

In this strategy, the College will make available authorised consumer information directly to the general community, consumers and carers, their representative organisations and health service information and delivery units including DI referrers and providers.

Alternative pathways are provided for DI Practices, health providers and organisations to develop service-specific DI consumer information guided by the College's recommended consumer information standards. For example, local DI practices may choose to produce their own consumer information, reflecting locally available services and processes; or a cancer treatment or women's health organisation may choose to develop information tailored specifically to the conditions and DI modalities they use or refer for.

## **Professional education and training**

Many other health quality improvement strategies have identified gaps in curricula at undergraduate and postgraduate level in addressing consumer perspectives on their field. Our project has identified similar issues associated with information giving in referrer and DI practice. We received a number of comments throughout the project that referrers tend to be under-informed about DI generally and have often only had limited exposure to the specialty in undergraduate education. What education was provided appeared to be about the use of tests as a clinician rather than any broader consideration of the role that DI testing plays in the patient experience of their health care. Given the esteem in which the College is held by the stakeholders participating in this project, this suggests a valuable and timely professional development opportunity exists for the College to influence the skills of DI referrers. Such an education strategy might be directed to providing GPs with resource materials about the range and purposes of contemporary DI tests, both to update their knowledge and to influence the selection of appropriate DI tests.

While a specific undergraduate curriculum topic of the consumer experience in DI may be ambitious, it should be seen as a desirable target. In the interim, a worthwhile strategy would be to include consideration of the patient experience and needs within current educational activities conducted by the College and its Fellows. This is likely to help present the College as the leading community resource for DI information to consumers as well as the medical community.

**20:** Develop and promote resource materials for non-specialist practitioners to update their knowledge on the range and purposes of contemporary DI tests

**21: Promote adoption within undergraduate and postgraduate health professional curricula of a component addressing consumer perspectives and needs in DI testing.**

**22: Promote consideration of consumer perspectives and needs in DI in educational activities conducted by the College and its Fellows.**

## Appendix A: Phases of CS4

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Stage One		Stage Two	
Phase 1	Phase 2	Phase 3	Phase 4
1 June - 30 June 2005	1 July – 31 December 2005	1 June 2006 – 30 April 2007	1 May – 30 May 2007
<p><b><u>Initiation</u></b></p> <ul style="list-style-type: none"> <li>• Confirm project design</li> <li>• Setup research tasks</li> <li>• Convene Project Reference Group</li> </ul>	<p><b><u>Consultation and Data Collection</u></b></p> <ul style="list-style-type: none"> <li>• Literature Review</li> <li>• National CATI Survey of consumers</li> <li>• Waiting room survey of consumers</li> <li>• Focus groups of consumer organisations</li> <li>• Provider Interviews</li> </ul>	<p><b><u>Design, Develop and Evaluate</u></b></p> <ul style="list-style-type: none"> <li>• Information materials</li> <li>• Strategies</li> <li>• Pilot test and evaluate</li> </ul>	<p><b><u>Report and Recommendations</u></b></p> <ul style="list-style-type: none"> <li>• Summarise complete research</li> <li>• Recommendations for sustainable national strategies</li> </ul>

## Appendix B: Major focus of each data collection strategy

Tool	Data item assessed													
	Experiences of & exposure to DI	Expectations and awareness of DI services	Knowledge of DI practice accreditation	Informed consent	Perceptions of consumer knowledge – DI risks/benefits	Perceptions of consumer information needs	Attitudes to provision of consumer information	Preferences/experiences for information sources	Preferences for & acceptability of information content	Preferences for methods of presentation	Uptake and use of consumer information	Processes & barriers for dissemination	Tools for dissemination	Concerns about information provision
<b>Literature Review</b>	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
<b>Structured I/V</b>		✓	✓	✓	✓	✓	✓				✓			✓
<b>WR survey</b>	✓	✓			✓			✓	✓	✓	✓			✓
<b>DI Staff survey</b>	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
<b>Referrer survey</b>	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Focus Group</b>	✓						✓		✓		✓	✓	✓	
<b>CATI</b>	✓	✓	✓	✓	✓		✓	✓						

Structured Interview – of DI Providers; other key stakeholders, including peak consumer organisations

Waiting Room survey – of consumers in 5 DI practices (100 in each); DI Staff survey – of all staff in 5 participating DI practices; Referrer Survey – of most frequent referrers to each participating DI practice; Focus group – 6 x 8-10 consumer representatives

Computer Assisted Telephone Interview – of nationally representative sample of Australian general population (include 1600 DI consumers)

# Appendix C: RACGP CPD Approval

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25 May 2007

Tony Wade

Australia's Health P/L

P O Box 42

BROOKLYN NSW 2083

Dear Tony,

Re: **Application for point allocation of Category 1 Active Learning Module**

Title of Activity: Pilot test of diagnostic imaging consumer information resources in general practice

Activity Number: 731557

Thank you for your educational activity application. It has been adjudicated and assessed as an Active Learning Module. **Total 30 Category 1 points.**

Only GPs who attend and complete all components of the activity and evaluation are eligible to receive the total point allocation. Active Learning Module certificates must reflect this, and say 'Completed' **only** when a GP has completed the module, not simply 'Attended' the meeting. Please refer to Page 4 of the Provider Admin Requirements attachment.

If you intend to advertise your approved activity and its point allocation, please use the following wording **ONLY** on your promotional material:

**This Active Learning Module has been approved by the RACGP QA&CPD Program.**

**TOTAL POINTS: 30 (Category 1)**

Upon completion of this activity you will need to submit an electronic attendance list to this office with those GPs who have completed the full module. The list should include the names and QA&CPD numbers of participants with the activity number as listed above. If these numbers are not included, we are not able to allocate QA&CPD points to the GP's. Those GPs who do not complete the full module should be submitted on a separate list and a separate activity number (Category 2) must be applied for. If this applies to you please advise our office and we can provide you with the necessary information.

Please read the attached Provider Admin Requirements and Quality Review Process document which details the various situations where the RACGP reserves the right to request alteration or withdrawal of an activity. You can also refer to the RACGP Website [www.racgp.org.au](http://www.racgp.org.au) for full details of your requirements as an education provider.

If you require further information please do not hesitate to contact our office.

Yours sincerely

Barbara Mossman for EG

Eric Gibbings B.Sc., Dip.Ed. M.Ed.

Professional Development & Quality Advisor

NSW/ACT Faculty RACGP

Telephone: 02 9886 4711

Email: [eric.gibbings@racgp.org.au](mailto:eric.gibbings@racgp.org.au)

# Appendix D: Sample of Pilot material

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Example of pilot material. All sheets were formatted as two column, double-sided single A4 sheets.

## CT Scan - Consumer Information (Draft for your comment)\*

### What is a CT Scan?

A Computerised Tomography (CT) scan uses X-ray images and a computer to build pictures of sections inside the body.

A CT scanner looks like a giant cube with a hole in the centre. Inside the cube are a number of X-ray sources and detectors.

The person having the CT scan lies on a flat bed which moves slowly in and out of the hole. Images can be taken from all sides of the body.

### How do I prepare for a CT Scan?

Preparation for your CT scan is quite easy. Metal and certain clothing can affect the images so you will have to remove all jewellery, glasses, hairpins or hearing aids. You may be provided a gown to wear during the scan.

If your child is having the scan, your doctor and the radiology practice can advise you if there is any special preparation required.

If you are pregnant or think you may be pregnant, tell your doctor and the radiology practice before having a scan. X-rays at high doses may affect an unborn baby.

For some scans a liquid is swallowed or given by injection before the scan. The liquid contains “contrast” materials which help show the area for imaging more clearly, and can also show how it is working. If you are having one of these scans, your doctor and the radiology practice can advise you if there is any special preparation required. (also see the “what are the risks...” section)

### What happens during a CT Scan?

You will be asked to lie on the scanner table, which is then moved into the centre space of the scanner machine. This allows the area of the body for imaging to be placed between the X-ray source and the detector.

Because CT scans use X-rays, all other people leave the CT room during the scan examination. The CT scan staff control the movement of the scanning table from behind a protective screen but they can see, hear and speak to you at all times.

During this time, you will be given instructions over an intercom about breathing or turning for the scan.

Some people may be very sensitive to the high frequency sounds of the CT scanner, or feel closed in when having their scan. If you think this may happen to you, ask your doctor or radiology practice for advice before you have the scan.

If you are having a contrast injection with your scan, you might feel a temporary hot flush all over your body. A small number of people also feel temporary nausea but generally these feelings pass quite quickly.

### Are there any after-effects from a CT Scan?

There are usually no after-effects from the scan, and you can usually go about your normal activities straight afterwards. If your scan required contrast material, your doctor or the radiographer will give you any special instructions to follow after the scan.

### How long does a CT Scan take?

A CT scan usually takes about half an hour – but most of this time is taken to position the patient and the scanning equipment for picture accuracy and quality. Lying still during the scan can be uncomfortable. If you are getting stiff and need to move, tell the CT scan staff.

When the test is over, you may be asked to wait while the images are reviewed to see if more are needed.

### What are the risks of a CT Scan?

#### Radiation

CT scans use X-rays which expose a part of your body to a low level of radiation. Exposure to the X-rays used in CT scans depends on the number of images taken. The level of radiation used is kept to a minimum. Currently, the increase in the risk of cancer as a result of exposure to diagnostic levels of radiation, like you might receive during a CT scan, is unknown, but considered to be very small. Generally, this very small risk is far outweighed by the value of the information provided by the CT scan.

If you are pregnant or think you may be pregnant, tell your doctor and the radiology practice. There is a small risk that X-rays may cause an abnormality to the unborn child.

#### *Contrast liquids and injections*

It is very important to tell your doctor and the radiology practice if you have diabetes, or have had kidney disease or surgery. People with diabetes or a history of kidney surgery or reduced kidney function for any reason may have their kidney function further decreased if they have intravenous contrast. You may need to have a blood test to assess your kidney function before the contrast can be injected.

Contrast liquids can cause an allergic reaction in a small number of people. This ranges from a mild rash to, much more rarely, swelling of

the face and breathing difficulties. Allergic reactions will be treated with medication at the time. If you have an allergic reaction, you may need to remain at the radiology practice for a while after your scan is finished so that the radiologist can ensure that you are okay before you go home.

It is very important that people with asthma or previous allergic reactions to any foods, drugs, or X-ray contrast liquids should advise their doctor and the radiology practice before having contrast liquids or injections. These people have a risk of an allergic reaction and may need pre-medication or avoidance of contrast materials during the CT.

### What are the benefits of a CT scan?

CT scanning is a painless, accurate and fast way to identify normal and abnormal structures. CT scans have advantages over normal X-ray images because they can provide a high level of detail of internal organs, bones, or blood vessels.

### Who does the CT scanning and report?

The person who operates the CT equipment is a radiographer. The person who views the CT scan images and interprets them is a specialist doctor - a radiologist. The radiologist provides a written report to your referring doctor

### What are the costs of a CT scan?

The cost to you of a CT scan depends on a number of factors. These include who makes the referral, where the scan is done and whether you are eligible for any concessions. Talk to your referring doctor about what cost may be involved and ways you may be able to reduce these. When booking an appointment at the radiology practice you should ask about any costs to you.

### Where is a CT scan done?

A CT scan is done in a radiology practice – which may be located in a hospital or in the community. There may be a radiology practice near you, or your doctor may suggest a particular radiology practice that has the CT scan equipment.

You will need to contact the radiology practice and make an appointment for your test. This is also a good time to ask any

questions you have about your test or preparation and advise the practice if you have any special needs.

### When can I expect the results of my CT scan?

CT scans record images through a computer. A radiologist interprets these images and provides a report for your doctor — this usually happens within a day or two of your scan.

You may need to make an appointment to discuss the results with your doctor.

### Where to find further information

If you would like to know more about CT scans, ask the radiology practice to which you have been referred. If you have any questions or concerns about having a CT scan, talk to the radiology practice or your doctor.

### Who is involved in my test?

Radiology is the medical speciality which uses imaging technologies such as X-Ray, CT and MRI scans to assist the diagnosis of problems and treatment options.

A radiologist completes a medical degree followed by at least two years in general clinical training; and then a five year specialist training program.

The Royal Australian and New Zealand College of Radiologists (RANZCR) conducts the specialist training program and sets professional standards for radiologists.

Radiology testing is conducted by qualified and accredited staff, such as radiographers and sonographers. The radiologist views the images produced from the test and provides a report for your referring doctor.

This information sheet is being pilot tested for national use as part of a project for the Royal Australian and New Zealand College of Radiologists (RANZCR).

Your comments can help make this information useful for other patients and their carers. **We would welcome your feedback** to the project consultants, Australia's Health P/L. until the end of April 2007

There are three ways to make comment:

1. complete a brief, anonymous form on-line at [www.australiahealth.com](http://www.australiahealth.com)
2. give feedback to the doctor or radiology practice who gave you this information sheet.
3. phone your comments to the project toll -free number: 1800 446 885

Some questions are:

- was the information easy to read and understand?
- was it useful?
- did it meet all your needs for information about your radiology test?

# References

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