11 Conclusion

This is the first study of its type in Australia and a review of the literature suggests it is possibly the first in the world. It has provided an overview of the extent to which GPs order imaging and the relationship between characteristics of the GPs, their patients and the morbidity under management, to the rates of orders placed. It has demonstrated that the best predictors of high rates of ordering are the number of new problems presented to the GP, the size of the practice, the geographic location of the practice and the type of morbidity managed. However, other influences on ordering rates are apparent, including the gender of the GP and the State/Territory of the practice. In turn, this has allowed an evaluation of the guidelines currently available to GPs on this subject, in light of the results and the broader literature.

The study suggests that the next revision of the RANZCR guidelines could benefit from the inclusion of evidence for each guideline. Consideration should also be given to the development of a scoring system similar to that used in the ACR Appropriateness Criteria. However, care must be taken to ensure that any advice to GPs is in line with the systemic limitations placed on GP ordering. Revision should also consider the need for more focused attention on specific diseases or diagnostic problems and guideline development rather than on the use of specific tests. The absence of guidelines in some diseases commonly managed in general practice (such as osteoarthritis) should also be addressed.

Currently, the guidelines appear to have little input from general practice, yet they are the end users of the product. Inclusion of GPs on the editorial panel in future could be of benefit in the development of the most usable set of guidelines.

Further research also needs to be undertaken into the impact of guidelines on performance, prior to larger investment in decision support systems in this area. Linking quality improvement in diagnostic imaging with more general quality improvement initiatives may be productive. The 'Building on Quality' project currently being undertaken by a consortium of six Divisions of General Practice with funding from the DHAC is an example of such initiatives.

The results indicate that in the majority of areas of investigated performance GPs are ordering imaging in a manner which is consistent with the available guidelines. These areas include the use of chest x-rays, mammographies, breast ultrasounds and Dopplers, and their selection of tests to be undertaken for abdominal pain, the assessment of breast lumps, imaging of the shoulder, and in the management of head injuries

However, there are some areas where a reduction in ordering of specific imaging types would be unlikely to have a negative impact on the quality of care. These include the ordering of spinal x-rays and x-rays of the ankle. A decrease in ordering of imaging of the knee might also be accomplished by distribution to GPs of the ACR Appropriateness criteria for the use of knee radiology.

There are some areas in which there are systemic blocks to improving performance and these include the system block on GP ordering of MRIs and MRAs and echocardiography. These blocks sometimes lead the GP to order a less suitable investigation. In light of overseas research which indicates satisfactory selectivity by GPs in the use of such tests when given the freedom to order them, consideration should be given to removing these blocks to GPs either fully, or for selected problems under investigation.

The possible need for further education of GPs about echocargiography tests and interpretation of the results, should also be considered.

Health planners and policy makers should note the apparent relationship between practice size and ordering rates and should consider the overseas research findings of a relationship between ownership of radiology facilities and ordering rates. It could be postulated that if corporatisation of general practice leads to increases in both the number of large practices and in co-ownership of imaging facilities and general practices, imaging order rates might be expected to rise in the future. In a situation of capped radiology rebates, this may distort the distribution of available revenue among radiologists.

This study has provided new insight into the relationship between GP characteristics and ordering behaviour, and between orders for specific imaging test types, the patients for whom the orders were placed and the problems under investigation. It has demonstrated that GP ordering behaviour follows the available guidelines in the majority of areas. However, it has also served to highlight some areas in which improvement would be desirable in both the guidelines themselves and in GP test selection.

This report provides a baseline against which future practice can be compared and a means by which the impact of the new RANZCR guidelines, recently distributed to all GPs in Australia, can be tested in the future.