Demand Management in Pathology

An Australian Association of Pathology Practices supplementary paper to the Strategic Review into Future Funding Arrangements for Pathology.

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Recommendations

1. Demand Management should be actively pursued in both the Medicare and Public Hospital environments. There needs to be a coordinated approach from Governments (Federal and State/Territory), requester representatives, and Pathologists and pathology practices.

2. There are a number of successful Demand Management interventions currently used in Australia and these need to be more widely applied and actively promoted.

3. Strategies to be considered include:

(i) Provision of information on test cost to requesting practitioners both at the time of requesting and as a regular individualized report;

(ii) Further development of Clinical restrictors (linked to clinical circumstances) for certain tests through PSTC;

(iii) Development of Guidelines defining test repeat intervals/frequency which are enabled by Electronic Decision Support;

(iv) Improved availability of past results through improved electronic communication and unique patient identifiers;

(v) Examination of tests and circumstances where requests may be restricted to certain requesting practitioners;

(vi) Development of Requesting Guidelines relating to test selection for certain clinical circumstances which are enabled by Electronic Decision Support; and

(vii) Development of education programs in the use of Pathology tests for requesting practitioners and consumers.

Background

The increase in the use of Pathology tests in Australian Health Care has outstripped the growth in most other medical activity, and in particular the professional attendances that are after all responsible for generating the Pathology requests. Mostly the responses to this growth by regulators and payers of these tests have been directed at the supply side of the equation, principally by reducing price (and cost) at the per test level. In Australia, this strategy has successfully restrained growth in total Pathology expenditure; however, there is growing concern that most of the efficiency gains in laboratories have now been found, and that controlling the demand for pathology tests (principally from requesting practitioners but also from patients and others such as Government agencies) should now take a greater role.

Pathology test requesting patterns have for years been the subject of some analysis and much discussion. The demand for Pathology is a worldwide problem with the Australian experience being similar to that seen in most first world countries.

What analysis has been done?

The Medicare data base is a veritable 'gold mine' of information but, despite regular reports to PCC and PSTC and the work of the Statistics Subcommittee, it still remains relatively 'unexplored'. Most of the data analysis has occurred at the test or item of service level which overlooks the significance of the Pathology Episode - those tests that are requested during that clinical encounter, performed as a time related group in the laboratory. Medicare data is also imprecise as many different tests are listed under the same item, so a test by test analysis cannot be performed in these cases, and billing rules mean that a significant proportion of tests requested and performed are not recorded in the MA data base. The absence of any information about the clinical presentation of patients and the extreme sensitivity regarding access to the Medicare data base also limit its usefulness.

The BEACH data base (University of Sydney) provides significant additional insights into test requesting with the drawback that data samples are taken at a single point in time (the data base does not track what happens to a patient or what Pathology tests are requested over the whole course of investigating and managing a patient's clinical problem). However, the tests requested were well identified (compared to Medicare item numbers). The first BEACH study on Pathology test requesting by GPs (1998) was a revelation. It showed that GPs were not a uniform group in relation to their Pathology use (there were high and low volume requesting GPs); Pathology test use was split between diagnosis (40%), monitoring (40%) and screening (20%); and there were clear relationships between the specific problems being investigated or managed and the tests that were requested. Since 1998, the BEACH survey has been conducted annually, and trends in GP activity and Pathology requested by GPs has been analyzed.

From the BEACH data base we now know that there are 3 categories of factors affecting Pathology use - GP related factors, Patient related factors and other (often unknown).

Young female part time GPs working in larger group practices request more pathology than older male full time solo GPs (the opposite applies for prescribing rates). GPs in regional and remote areas use more Pathology, presumably as their patients have less access to Clinical Specialists. Patient factors are also very important. Although the main driver for Pathology use is the clinical problem, patient age, gender, area of residence and socioeconomic status all interact. Approximately 2/3rds of GP requested Pathology is from female patients. Even after removing Cervical smears (1.5 million pa) and antenatal screens (250,000 pa) from the total 30 million episodes of Pathology tests that are performed each year, there is still a clear female predominance for Pathology test use. Older patients have higher rates of Pathology test use and the aging of the population is a factor in increasing Pathology test utilization.

The main factor, however, is the clinical setting – the problems managed by the GP. BEACH data tell us what the Medicare data base cannot: certain problems have a high Pathology test dependence and others do not. Trend analysis shows a greater increase in those conditions/problems that have a high Pathology dependence (especially some chronic diseases).

Despite all this analysis there is significant unexplained variation in requesting rates and it is reasonable to conclude that some inappropriate use of Pathology with both over-utilization and under-utilization is occurring. Demand Management strategies need to take these factors into consideration.

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Demand Management Strategies

A number of Demand Management strategies have already been used in Australia and other countries. The Quality Use of Pathology Program has funded a number of studies that have tested various Demand Management strategies. These strategies include:

1. Test cost feedback to requesters

In 1991 General Practitioners were first given feedback by the Health Insurance Commission (now Medicare Australia) about their Pathology test requesting patterns. The initial letters with accompanying data alarmed many GPs (who saw this as a 'Big Brother' exercise) and the way the data was presented was misleading (the averages arrived at included data from part time GPs so that an 'average full time GP' would invariably have an above peer usage pattern). Following distribution of the letter there was an immediate reduction in Pathology requesting, but further analysis showed that this reduction occurred for both GPs with high Pathology usage patterns and those with low usage patterns. Over the next 5 years a series of these letters was sent out to GPs with progressively more sophisticated analysis (including listing those patients that GPs had requested the most Pathology tests for) but over time there was less and less impact on requesting patterns. Anecdotally, there also seemed to be an element of 'catch up' by those GPs who initially had low requesting rates. Specialists were later included in the feedback letter program but their requesting rates (which varied greatly between the various Specialty types) were unaffected. Overall, the strategy was seen to be effective, albeit with reducing impact over time. **The AAPP feels it is strange that GPs and Specialists no longer receive regular feedback on their use of Pathology investigations (and other parameters such as Diagnostic Imaging use etc). The AAPP recommends that this measure be reintroduced.**

A number of studies (mostly conducted in US hospitals) have been performed to examine the impact of advising requesting doctors of the cost of the investigations that they are requesting. In virtually every case this has been shown to cause some reduction in pathology test use. This method of Demand Management requires the use of on line ordering and this has been the main impediment to its introduction. In Australia there would need to be Government funds provided to the various medical software companies to program this feature into their Pathology requesting modules. The AAPP has been a long term advocate of this Demand Management mechanism.

2. Clinical restrictors

Since the review of the Pathology Services Table in 1988 there have been tests listed that are restricted (for the payment of benefits) to certain clinical situations. For example Hba1c payment will only occur if the patient is a known diabetic, and tumour markers will only be reimbursed when used for monitoring a patient with known malignancy. Over time the PSTC introduced many clinical restrictors for tests, and now in 2009 there are 92 items that contain a clinical restrictor (out of a total of 369 test items in the PST). Although this may be seen as a 'supply side measure' there is no doubt that requesters are made aware of these restrictors by pathology laboratories (and to a lesser extent by Medicare Australia) and generally abide by them. Thus they do play a role in Demand Management. These restrictors have required review over time and have been modified by PSTC to reflect changes in medical knowledge and contemporary practice.

3. Test requesting frequency and test repeat intervals

Repeating the same tests within a short time interval has long been identified as a potentially wasteful practice. This has particularly been a problem in Teaching Hospitals with inexperienced junior doctors being responsible for much of the test requesting, and where transfer of patients through a hospital (eg emergency centre to ward) and with multiple doctors involved in a patient's care lead to confusion about whether tests have been requested or not. Initially driven by hospital laboratories, rules developed for laboratory information systems were used to identify these unnecessary repeat requests. Now with electronic requesting, these rules can notify the doctor at the time of repeat request. Retest intervals have been developed through consensus between requesters and pathology laboratories, and a number of pilot projects have been funded through the QUPP. This has been an effective intervention leading to a reduction of pathology tests in Teaching Hospital settings in the order of 10 – 20%. The savings obtained through this program will usually pay for the cost of introducing an electronic requesting system. In the non-Teaching Hospital environment (and especially for community medicine) the amount of unnecessary repeat testing is much less, and thus the potential savings are much less. One area that could be improved is where tests are repeated on admission to hospital or when a patient is seen by a Specialist – often just because the results of previous tests are not available. Improvements in electronic communication of results (incorporated into current NEHTA projects) would assist greatly in this area. Unique patient identifiers are critical elements in linking results stored in various data bases.

Within the PST there are, as well as clinical restrictors, time and frequency related restrictors affecting 38 items (listed in Rule 25). There is also the 'Multiple services rule' (Rule 3) that means that generally a Medicare payment is available for a test only once in one day. As seen with clinical restrictors, many requesters are aware of these time and frequency payment rules and generally abide by them.

This is the area where waste has been most definitely identified in a number of studies. It is fairly easy to achieve consensus regarding retest intervals. The AAPP supports the widespread use of this mechanism of Demand Management. Better electronic communications between data bases and greater use of electronic requesting will make this achievable.

4. Requester restrictions

In some Public Hospitals there are established hierarchies for many activities including requesting Pathology and Diagnostic Imaging. These have been shown to be an effective way of restricting the use of expensive and time consuming investigations while at the same time educating junior doctors in the most appropriate use of these investigations. Although a similar strategy was followed for community MRI requesting in the private sector (via the Medicare Benefits Schedule), anecdotal reports suggest that this has lead to extra CT scans being performed, rather than these being substituted by MRI scans. The application of a hierarchical requesting system for Pathology is not supported by the AAPP.

5. Pathology test guidelines and electronic decision support for requesters

Currently guidelines exist for the use of Pathology tests in a number of circumstances. These guidelines are often 'expert opinion' or 'consensus' based guidelines and come from a whole range of groups such as disease-centric entities (eg Australian Heart Foundation), working groups (eg Australian Diabetes Working Group) and Medical Colleges. They usually cover well defined clinical circumstances (eg monitoring patients with type II Diabetes) and may be used to audit health care system performance. An example of the success of guideline development and promulgation are pictures of the average GP with a stack of relevant guidelines in front of them that is higher than their desk! There are currently deficiencies in the range of available guidelines – especially lacking is guidance to GPs on how to manage (including investigate) undifferentiated illness. However, the main problem with guidelines is how to make them user-friendly and relevant to the circumstances in which they are needed, and then how to get requesters to consistently use them. This is a worldwide problem, and informed opinions appear to all point towards a solution using Electronic Decision Support with sophisticated interplay with the clinical record.

Most medical decision making is based on intuition which is 'wrapped around' a large knowledge base. Subtle patient factors are invariably part of the input into this process which occurs in a remarkably short time frame (only a fraction of the 10 – 20 minutes taken for most GP-patient interactions). Advanced decision support would be valuable, but only if it takes these issues into consideration and only if does not add time to the consultation. Thus the impediments to widespread and effective use of decision support in test requesting are considerable. Adding patient participation into this decision-making process is yet another challenge!

GPs were 'early-adopters' of IT in our health care system. This was encouraged by financial support by Government, but a major element was the capacity for IT to make certain tasks easier – these were Prescription writing, Pathology and Diagnostic Imaging requesting and constructing Specialist referral letters. In each of these cases the ease of transferring patient demographics and elements of the clinical record is of assistance. Regarding adding decision support to these processes, the AAPP finds it strange that Therapeutic Guidelines have not been incorporated into the prescribing module of the most popular Practice Management Systems (after all, Therapeutic Guidelines generally promote cheaper medications). **There is no doubt that decision support using established guidelines for Pathology test use could be incorporated into Pathology requesting modules.** This has been done in a limited number of places world wide (the best evaluated being the Bloodlink system in the Netherlands). There are high levels of difficulty associated with this task – the system would need to mimic 'best practice' (often the result of intuitive decision making) and it would need to shorten the time taken by this task (Pathology requesting – something that occurs for every fifth patient a GP sees). A large proportion of QUPP funding has gone towards this area of activity and to date there is limited use of Electronic Decision Support for Pathology requesting in Australia. This highlights the difficulties that exist here, **however the AAPP strongly supports the use of Electronic Decision Support in Pathology requesting.**

Examples of guidelines (either available or in development) include:

- **Investigative**

Arthritis
Rash
Cough
Abdominal pain/bloating
Dyspepsia
Diarrhoea
Weakness/tiredness
Weight gain/loss

- **Monitoring**

Antenatal
Hyperlipidemia
Hyperglycaemia (pre diabetes)
Failing thyroid syndrome

- **Management**

Diabetes mellitus
Chronic renal disease
Chronic liver disease
Hypertension
Hyperlipidaemia
Malignancy
Various medications

6. Education

This is critical and should encompass these issues: use of tests (including limitations), pre-analytical and biological variation, pre and post test probabilities, Negative Predictive Value/Positive Predictive Value, normal ranges, significant abnormalities including trends, appropriate retest intervals, and sequential testing strategies. Education will lead to both increases and decreases in Pathology use.

Education of both consumers and medical practitioners has been a feature of successful strategies developed by the National Prescribing Service to reduce antibiotic use in respiratory tract infections. Targets of an education program for Pathology ordering include:

- Consumers/Patients
- Medical students
- Postgraduate years 1&2 (RMOs, JHOs)
- GP and Specialist trainees
- Continuing Professional Development Programs (Colleges)
- Feedback & audit (established referrers)

The AAPP strongly supports the development of education programs in the use of Pathology tests for requesting practitioners and consumers.