

# Effective reduction of unnecessary pathology testing: Combining a clear rationale with staff support initiatives

## Introduction

This project was an initiative undertaken by the Sydney West Cancer Network in 2006. It was supported by the Cancer Institute NSW Health Services Innovation Grants Program, which provided \$2,949,716 in 2007–08 for the development of a number of clinical cancer service redesign initiatives. The project aim was to ensure patients were receiving time efficient and appropriate pathology tests, thereby ensuring a cost effective care model for ordering of pathology. The specific objectives were to:

1. Eliminate orders for tests which occurred excessively with no direct impact on patient outcomes.
2. Reduce the cost of pathology testing to the Sydney West Cancer Network.

## Background

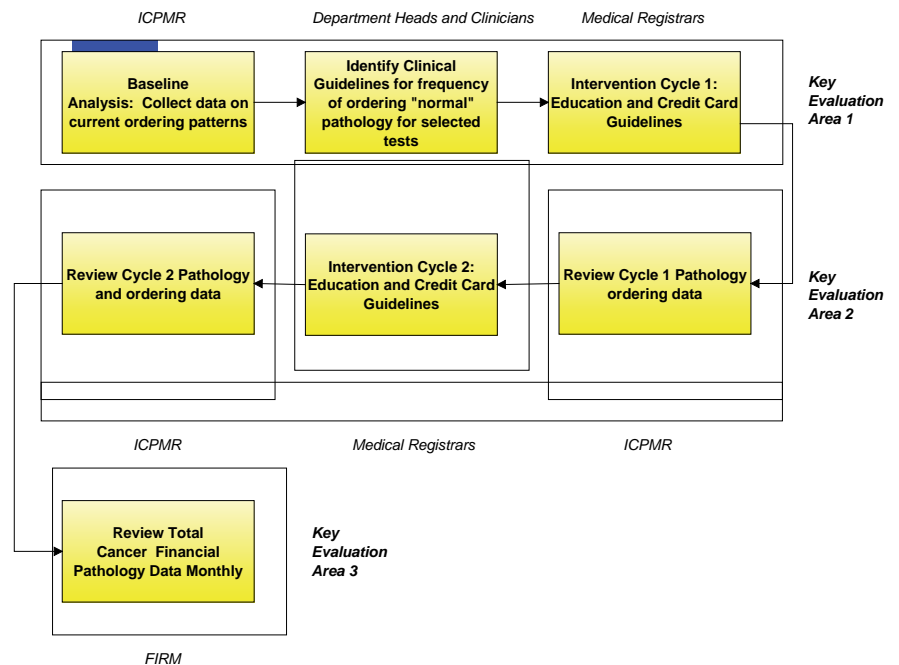
Care for cancer patients relies critically on the correct utilisation of pathology laboratory tests. In a general sense, the past two decades have witnessed a dramatic rise in the number of requested pathology tests and subsequent laboratory activity.<sup>1,2</sup> This has been paralleled by an increased number of inappropriate laboratory tests such as when a test is reordered within an inappropriate time period, not necessarily supplying additional information for patient care.<sup>3</sup> Inappropriate testing has been shown to lead to unnecessary, far-

reaching, expensive and time-consuming diagnostic examinations.<sup>4</sup> It is an area where major improvements have been considered to be necessary and has therefore received much attention in various pieces of project work.<sup>5,6,7,8</sup>

## Methodology

The Sydney West Cancer Network project looked at how to rationalise requests for pathology tests, without compromising patient care. Rather than focus on pathology testing by disease type, the team looked at baseline pathology and acceptable limits for testing. This led to the design of an agreed rationale for the ordering of tests for all medical oncology patients at the trial site. The following diagram illustrates the process undertaken:

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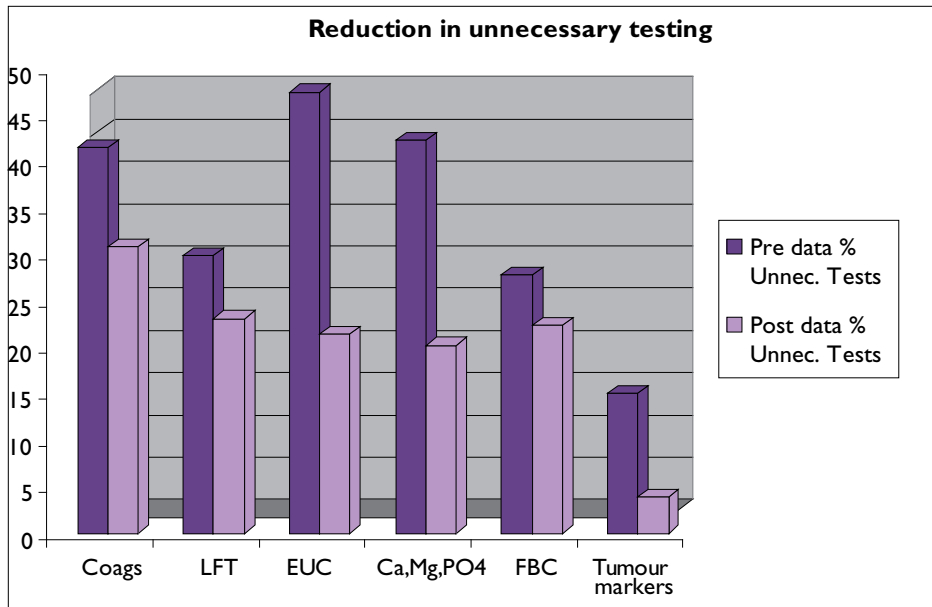
### Key Findings

The ordering of unnecessary pathology tests was greatly reduced by the introduction of a clear rationale for the pathology ordering accompanied by the following key initiatives:

- Education of medical staff.
- Reinforcement by senior staff on rounds.
- Placement of a reminder cheat sheet in every patient's file.

Importantly, when these initiatives were not adhered to or reinforced, unnecessary pathology orders increased.

The data on this page is from medical oncology patients admitted to inpatient areas at Westmead Hospital.



Pre data				Post data			Impact of implementation guideline	
Dr	Patient No.	Avg No. Tests/ Pt	Avg Cost Unnec. Tests/ Pt	Patient No.	Avg No. Tests/ Pt	Avg Cost Unnec. Tests/ Pt	Net Savings per patient	% Reduction in testing
1	15	35	\$219.81	15	19	\$91.46	\$128.35	9
2	45	25	\$125.69	17	34	\$112.91	\$12.78	11
3	5	79	\$390.02	2	47	\$204.90	\$185.12	4
4	41	16	\$91.99	4	20	\$117.75	-\$25.76	0
5	37	17	\$98.77	8	9	\$14.15	\$84.63	29
6	44	32	\$203.48	19	29	\$89.83	\$113.66	19
<b>TOTAL</b>	<b>187</b>			<b>65</b>				

### Conclusion

Guidelines for pathology ordering are effective in reducing unnecessary pathology tests and the associated costs to the facility only when accompanied by education for staff, reinforcement by senior staff and when reminder cheat sheets are included in all patient files.

### References

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3. Bates, D. W., et al. (1998). "What proportion of common diagnostic tests appear redundant?[see comment]." *American Journal of Medicine* 104(4): 361-8.

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Medical oncology inpatient ordering guidelines

## Guidelines for pathology testing

If more frequent testing needed – please indicate:

- A) treatment change
- B) clinically unstable
- C) pre-chemotherapy check.

### Liver function test

Normal	Do not repeat	
Mildly abnormal	<3x ULN	Weekly
	Bilirubin <30	Weekly
Significantly deranged	>3x ULN	Max 3 per week
	Bilirubin >30	Max 3 per week

### Tumour markers

CEA / Ca19.9 / Ca125 / PSA / AFP / BHCG

Max once every three weeks

### FBC – Do not repeat more than weekly if:

Neutrophils	4 to 13
Haemoglobin	>100
Platelets	100 - 600

### EUC – Do not repeat more than weekly if:

Na	130 to 145
k	3.8 to 5.0
Urea	< 8
Creat	< 120

### CMP – Do not repeat more than weekly if

Ca	2.13 to 2.63
Mg	0.7 to 1.1
PO4	0.8 to 1.5