

Diagnostic Imaging Pathways  
[www.imagingpathways.health.wa.gov.au](http://www.imagingpathways.health.wa.gov.au)

## Implementing Decision Support to Reduce Inappropriate Diagnostic Practice

Phillip Bairstow, Jennifer Persaud,  
 Richard Mendelson, Long Nguyen

## Diagnostic Imaging Pathways

Health service funder?

- expenditure on diagnostic tests is a major contributor to rising health care costs
- inappropriate diagnostic practice is stimulating this growth in expenditure

## Diagnostic Imaging Pathways

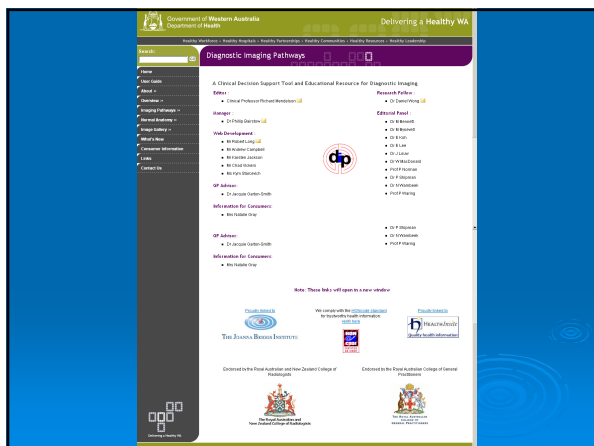
Health service manager?

- huge and unnecessary variation in clinical practice
- inefficient diagnosis and retardation of patient flow

## Diagnostic Imaging Pathways

Doctor (referrers and providers) or patient?

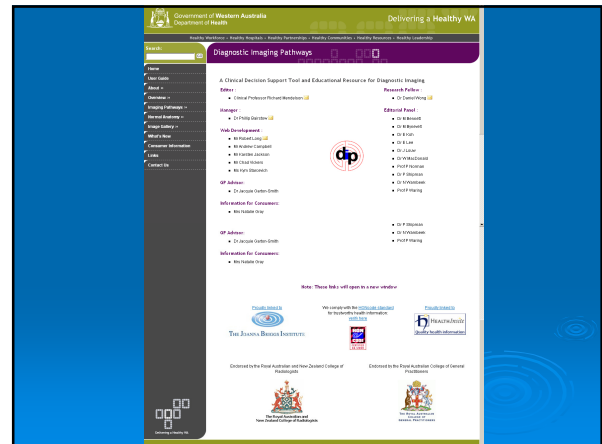
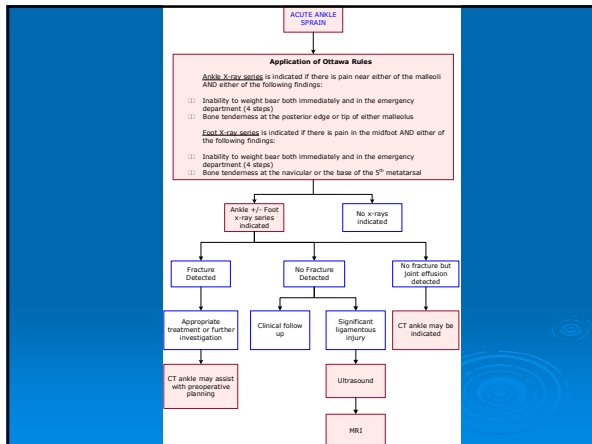
- exposure to the risks of diagnostic tests (especially ionising radiation) without compensating benefits



The screenshot shows the website's navigation menu on the left and the main content area. The main content area is titled "Diagnostic Imaging Pathways" and contains a list of links under various categories: "Clinical Decision Support Tool and Educational Resource for Diagnostic Imaging", "Research Policy", "Manager", "Editorial Panel", "WA Development", "DIP Policy Guidelines", "DIP Manual", "DIP Manual - English", "DIP Manual - Chinese", "DIP Manual - Vietnamese", "DIP Manual - Thai", "DIP Manual - Indonesian", "DIP Manual - Malay", "DIP Manual - Tagalog", "DIP Manual - Hindi", "DIP Manual - Urdu", "DIP Manual - Bengali", "DIP Manual - Persian", "DIP Manual - Arabic", "DIP Manual - Russian", "DIP Manual - Spanish", "DIP Manual - French", "DIP Manual - German", "DIP Manual - Italian", "DIP Manual - Japanese", "DIP Manual - Korean", "DIP Manual - Portuguese", "DIP Manual - Turkish", "DIP Manual - Vietnamese", "DIP Manual - Thai", "DIP Manual - Indonesian", "DIP Manual - Malay", "DIP Manual - Tagalog", "DIP Manual - Hindi", "DIP Manual - Urdu", "DIP Manual - Bengali", "DIP Manual - Persian", "DIP Manual - Arabic", "DIP Manual - Russian", "DIP Manual - Spanish", "DIP Manual - French", "DIP Manual - German", "DIP Manual - Italian", "DIP Manual - Japanese", "DIP Manual - Korean", "DIP Manual - Portuguese", "DIP Manual - Turkish".

## Diagnostic Imaging Pathways

[www.imagingpathways.health.wa.gov.au](http://www.imagingpathways.health.wa.gov.au)



## Diagnostic Imaging Pathways

Implementation of the pathways at Royal Perth Hospital

- regular reminders at 'Grand Rounds'
- clinico-radiological meetings
- medical newsletter
- orientation and induction programme of junior doctors

## Diagnostic Imaging Pathways

### Objectives

- quantify clinical non-compliance with pathway recommendations
- evaluate the impact of interventions to reduce non-compliance

## Diagnostic Imaging Pathways

### Methods

- retrospective audits of medical records of referrals from the Emergency Department of Royal Perth Hospital, before and after interventions
  - four diagnostic pathways targeted
  - any deviation between diagnostic practice and pathways documented as 'non-compliance'

## Diagnostic Imaging Pathways

### Methods (continued)

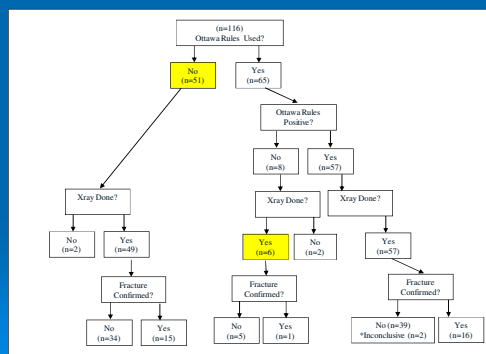
- interventions
  - requesters
    - all junior medical officers attended an education session and given instruction
    - all ED clinicians reminded at daily hand-over meetings
  - providers
    - modified imaging request forms requiring 'proof' of adherence to the pathways
    - incomplete request forms were to be returned to the requester for completion

## Diagnostic Imaging Pathways

### Results

PATHWAY AUDITED	FIRST AUDIT (Percent Non-Compliance)	SECOND AUDIT (Percent Non-Compliance)	COMPARISON
'Suspected Pulmonary Embolism'	66 (35%)	24 (22%)	p=0.017, chi-square
'Ankle Injury'	115 (77%)	57 (49%)	p<0.001, chi-square
'Suspected Renal Colic'	63 (71%)	55 (49%)	p=0.0015, chi square
'Non Traumatic Acute Abdominal Pain'	116 (54%)	35 (37%)	p=0.004, chi-square

### Results (continued)



## Diagnostic Imaging Pathways

### Conclusions

- The incidence of inappropriate and highly variable clinical practice is of great concern
- More of the same kind of effort to improve compliance is not advisable
  - Can't be sustained
  - Not effective

## Diagnostic Imaging Pathways

### Next Steps

- Decision support must be better embedded into clinical work flow
- Paper-based processes of requesting should be replaced by an electronic system
- Steps in completing an electronic request should be linked to decision support afforded by diagnostic pathways