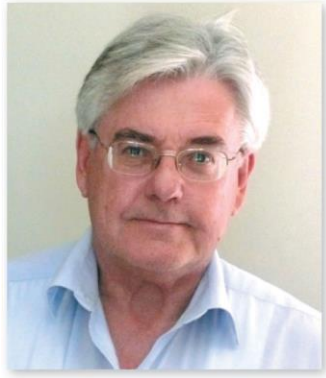




Professor Nik Bogduk

Professor
Pain Medicine
University of Newcastle



Dr Ian Wallbridge

Musculoskeletal Physician
Rotorua

Thursday, June 8, 2017

(Room 4)

14:00 - 16:00 WS #18: Musculoskeletal Medicine 3

ACUTE LOW BACK PAIN

Professor Nikolai Bogduk

**Newcastle Bone and Joint Institute
Royal Newcastle Centre**

ACUTE LOW BACK PAIN

CAUSE?

Don't know

Don't need to know

NATURAL HISTORY

Favourable

If managed well

TREATMENTS

Do not work

Something else needed

ASSESSMENT

HISTORY

RED FLAGS

CANCER PROTOCOL

YELLOW FLAGS

PHYSICAL EXAMINATION

IMAGING

ASSESSMENT

HISTORY

ASSESSMENT

HISTORY

RED FLAGS

RED FLAG CHECKLIST

Name:				Low Back Pain							
D.O.B				M.R.N.							
Presence of		Cardiovascular		Endocrine							
Trauma	Y N	Risk factors?	Y N	Corticosteroids?	Y N						
Night Sweats	Y N	Respiratory	Y N	Musculoskeletal							
Recent Surgery	Y N	Cough?		Pain elsewhere?	Y N						
Catheterisation	Y N	Urinary		Neurological							
Venipuncture	Y N	UTI?	Y N	Symptoms/signs	Y N						
Occupational exposure	Y N	Haematuria?	Y N	Skin							
Hobby exposure	Y N	Retention?	Y N	Infections?	Y N						
Sporting exposure	Y N	Stream problems?	Y N	Rashes?	Y N						
(Overseas) travel	Y N	Reproductive		G.I.T.							
Illicit drug use	Y N	Menstrual problems?	Y N	Diarrhoea?	Y N						
Weight loss	Y N	Haematopoietic		Signature:							
History of cancer	Y N	Problems?	Y N								
Comments											
© National Musculoskeletal Medicine Initiative 1999						Date:					

RED FLAG CHECKLIST

Bogduk N, McGuirk B. Medical Management of Acute and Chronic Low back Pain. An Evidence-Based Approach.

Name:		
D.O.B		
Presence of		Cardiovascular
Trauma	Y N	Risk factors
Night Sweats	Y N	Respiratory
Recent Surgery	Y N	Cough?
Catheterisation	Y N	Urinary
Venipuncture	Y N	UTI?
Occupational exposure	Y N	H
Hobby exposure	Y N	Retention
Sporting exposure	Y N	Stream p
(Overseas) travel	Y N	Reproductive
Illicit drug use	Y N	Menstrual
Weight loss	Y N	Haematopoietic
History of cancer	Y N	Problems
Comments		

Presence of

Trauma

Night Sweats

Recent Surgery

Catheterisation

Venipuncture

Occupational exposure

Hobby exposure

Sporting exposure

Overseas travel

Illicit drug use

Weight loss

History of Cancer

RED FLAG CHECKLIST

Bogduk N, McGuirk B. Medical Management of Acute and Chronic Low back Pain. An Evidence-Based Approach. Elsevier, Amsterdam, 2002.

Cardiovascular

Risk factors

Respiratory

Cough

Urinary

UTI

Haematuria

Retention

Stream problems

Reproductive

Menstrual problems

Haematopoietic

Problems

ain

Endocrine

glucocorticosteroids?	Y	N
-----------------------	---	---

culoskeletal

Pain elsewhere?	Y	N
-----------------	---	---

Neurological

symptoms/signs	Y	N
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Skin

Infections?	Y	N
-------------	---	---

Rashes?	Y	N
---------	---	---

Y	N	Diarrhoea?	Y	N
---	---	------------	---	---

ature:

Diarrhoea?

Y N

ature:

RED FLAG CHECKLIST

Bogduk N, McGuirk B. Medical Management of Acute and Chronic Low back Pain. An Evidence-Based Approach. Elsevier, Amsterdam, 2002.

Name			
D.O.B			
Presenting problem			
Trauma	Y	N	
Night pain			
Referred pain elsewhere?	Y	N	
Constitutional signs	Y	N	
Neurological signs?	Y	N	
Spinal cord compression?	Y	N	
Diarrhoea?		Y	N
Endocrine			
Corticosteroids			
Musculoskeletal			
Pain elsewhere			
Neurological			
Symptoms/signs			
Skin			
Infections			
Rashes			
GIT			
Diarrhoea			

ASSESSMENT

HISTORY

RED FLAGS

CANCER PROTOCOL

CANCER PROTOCOL

CANCER PROTOCOL

Past history of cancer

= "high risk"

ESR and imaging

ESR = erythrocyte sedimentation rate

CANCER PROTOCOL

Past history of cancer	= "high risk"	ESR and imaging
under 50		
no history of cancer		
no weight loss	= "low risk"	no investigations
no signs of systemic illness		
do not fail to improve		

CANCER PROTOCOL

Past history of cancer	= "high risk"	ESR and imaging
under 50		
no history of cancer		
no weight loss	= "low risk"	no investigations
no signs of systemic illness		
do not fail to improve		
over 50,	= "intermediate risk"	ESR →
fail to respond		
weight loss		
systemic illness		

CANCER PROTOCOL

Past history of cancer	= "high risk"	ESR and imaging
under 50		
no history of cancer		
no weight loss	= "low risk"	no investigations
no signs of systemic illness		
do not fail to improve		
over 50,	= "intermediate risk"	ESR →
fail to respond		
weight loss	< 20 mm/hr	no investigation →
systemic illness		

CANCER PROTOCOL

Past history of cancer	= "high risk"	ESR and imaging
under 50		
no history of cancer		
no weight loss	= "low risk"	no investigations
no signs of systemic illness		
do not fail to improve		
over 50,	= "intermediate risk"	ESR →
fail to respond		
weight loss	< 20 mm/hr	no investigation →
systemic illness	> 20 mm/hr,	imaging →
	if normal, monitor	

ASSESSMENT

HISTORY

RED FLAGS

CANCER PROTOCOL

YELLOW FLAGS

YELLOW FLAGS

Fear-avoidance behaviour can be suspected if the patient indicates

PHYSICAL ISSUES

DOMESTIC ISSUES

SOCIAL ISSUES

VOCATIONAL ISSUES

ASSESSMENT

HISTORY

RED FLAGS

CANCER PROTOCOL

YELLOW FLAGS

PHYSICAL EXAMINATION

ASSESSMENT

HISTORY

RED FLAGS

CANCER PROTOCOL

YELLOW FLAGS

PHYSICAL EXAMINATION

IMAGING

MEDICAL IMAGING

PLAIN X RAYS

“PATIENTS EXPECT X-RAYS”

Misconceptions by patients

- an x-ray will establish the diagnosis
- a normal film will exclude serious pathology
- x-rays are safe

Indulge or Dissuade

DISSUADE = EVIDENCE-INFORMED PRACTICE

controlled study¹

5 minute educational intervention

	Intervention	Control
Believe X rays necessary	44%	73%
Underwent radiography	fewer	
Satisfaction	same	

1. Deyo RA, Diehl AK, Rosenthal M. Reducing roentgenography use: can patient expectations be altered? Arch Int Med 1987; 147:141-145.

DISSUADE = EVIDENCE-INFORMED PRACTICE

Providing or withholding the results of plain radiographs made **little difference to outcomes** at six weeks or one year ¹.

Patients randomised to undergo radiography were actually **more disabled** and more likely to still be in pain at three months after inception ².

Finding an abnormality in those patients who had radiographs taken made **no difference** to outcome ².

1. Ferriman A. Early X ray for low back pain confers little benefit. Brit Med J 2000; 321:1489.

2. Kendrick D, Fielding K, Bentley E, Kerslake R, Miller P, Pringle M. Radiography of the lumbar spine in primary care patients with low back pain: randomized controlled trial. Brit Med J 2001; 322:400-405.

Hazards Professional

False sense of security

Lumbar spine radiographs may be false-negative in up to 41% of patients with known vertebral cancer ¹.

Osteomyelitis does not appear before 2 to 8 weeks of evolution of the disease; a normal radiologic picture does not exclude the diagnosis of spinal infection ².

False sense of achievement

Degenerative joint disease does not equate to back pain; attributing the back pain to these findings is misleading.

1. Frazier LM, Carey TS, Lyles MF, Khayrallah MA, McGaghie WC. Selective criteria may increase lumbosacral spine roentgenogram use in acute low-back pain. Arch Int Med 1989;149:47-50.
2. Waldvogel FA, Vasey H. Osteomyelitis: the past decade. N Engl J Med 1980;303:360-370.

Hazards Biological

radiation dose of a lumbar spine series delivers 40 times the radiation dose received from a chest x-ray ^{1,2};

a single lumbar spine series delivers to the gonads a radiation dose equivalent to that from having a daily chest radiographs for six years ^{1,3,4,5};

one million lumbar spine radiographs can result in 20 excess deaths from leukemia, and 400 excess cases of genetic disease ^{1,4,6}.

1. Frazier LM, Carey TS, Lyles MF, Khayrallah MA, McGaghie WC. Selective criteria may increase lumbosacral spine roentgenogram use in acute low-back pain. Arch Int Med 1989;149:47-50.
2. Whalen JP, Balter S. Radiation risks associated with diagnostic radiology. Dis Mon 1982; 28:73.
3. Reinus WR, Strome G, Zwemer F. Use of lumbosacral spine radiographs in a level II emergency department. AJR 1998; 170:443-447.
4. Hall FM. Back pain and the radiologist. Radiology 1980; 137:861-863.
5. Ardran GM, Crooks HE. Gonad radiation dose from diagnostic procedures. Br J Radiol 1957; 30:295-297.
6. Halpin SFS, Yeoman L, Dundas DD. Radiographic examination of the lumbar spine in a community hospital: an audit of current practice. Brit Med J 1991; 303:813-815.

MEDICAL IMAGING

PLAIN X RAYS

MEDICAL IMAGING

PLAIN X RAYS

- **Limited sensitivity, low specificity, except fractures**

MEDICAL IMAGING

PLAIN X RAYS

- **Limited sensitivity, low specificity, except fractures**
- **most often normal**

MEDICAL IMAGING

PLAIN X RAYS

- **Limited sensitivity, low specificity, except fractures**
- **most often normal**
- **or show only spondylosis**

MEDICAL IMAGING

PLAIN X RAYS

- Limited sensitivity, low specificity, except fractures
- most often normal
- or show only spondylosis

spondylosis $\neq$ pain

spondylosis $\neq$ diagnosis

MEDICAL IMAGING

CT **no value in back pain**
pre-surgical utility only, for lesions otherwise
detected

MEDICAL IMAGING

MRI

RED FLAGS ARE RARE

**IN ACUTE BACK PAIN
EVEN IN CHRONIC BACK PAIN**

MEDICAL IMAGING

MRI

RED FLAGS ARE RARE

**IN ACUTE BACK PAIN
EVEN IN CHRONIC BACK PAIN**

MRI is sensitive and specific, but expensive

MEDICAL IMAGING

MRI

RED FLAGS ARE RARE

IN ACUTE BACK PAIN
EVEN IN CHRONIC BACK PAIN

MRI is sensitive and specific

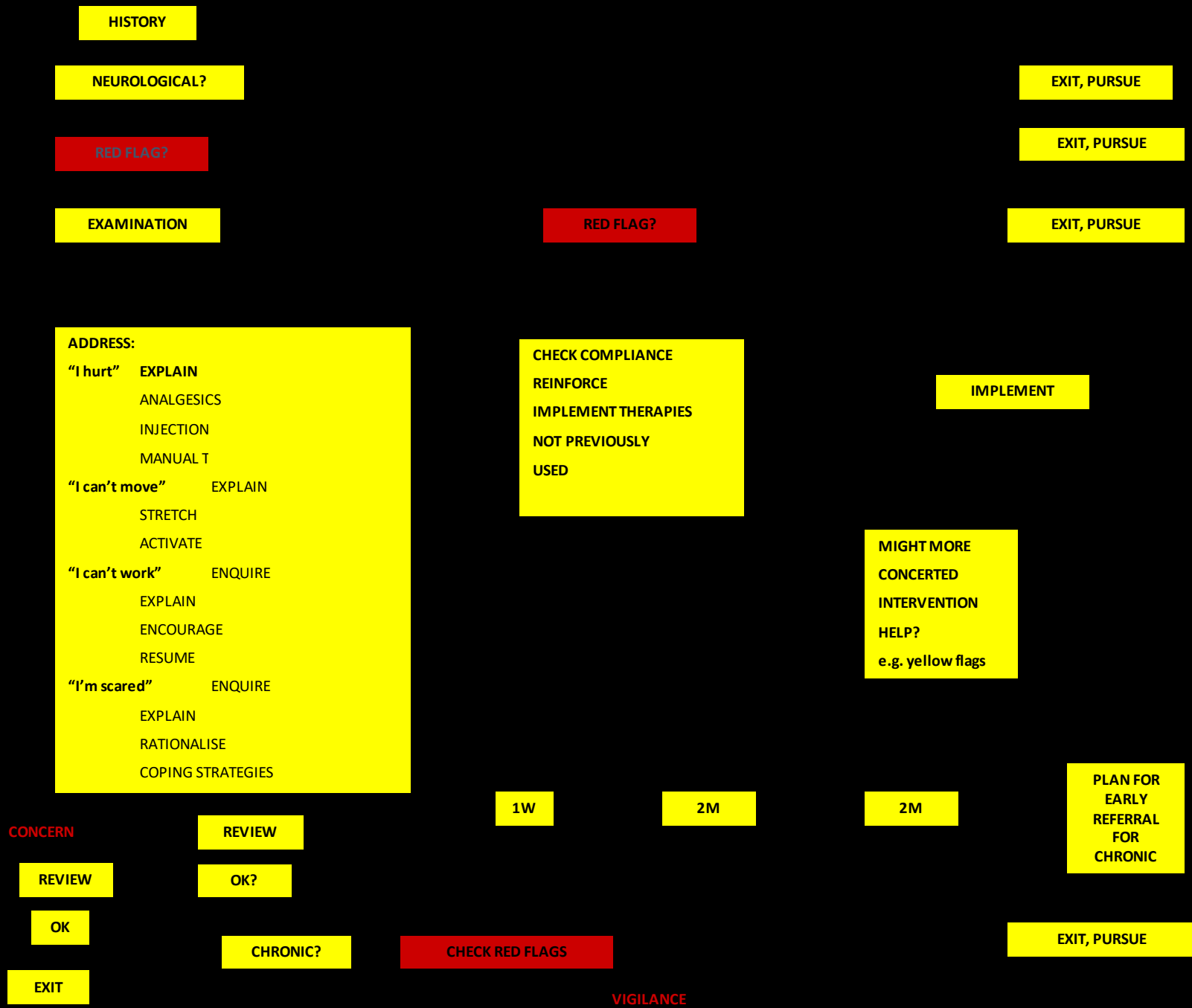
most appropriate screening test for **CHRONIC** back pain

ACUTE LOW BACK PAIN

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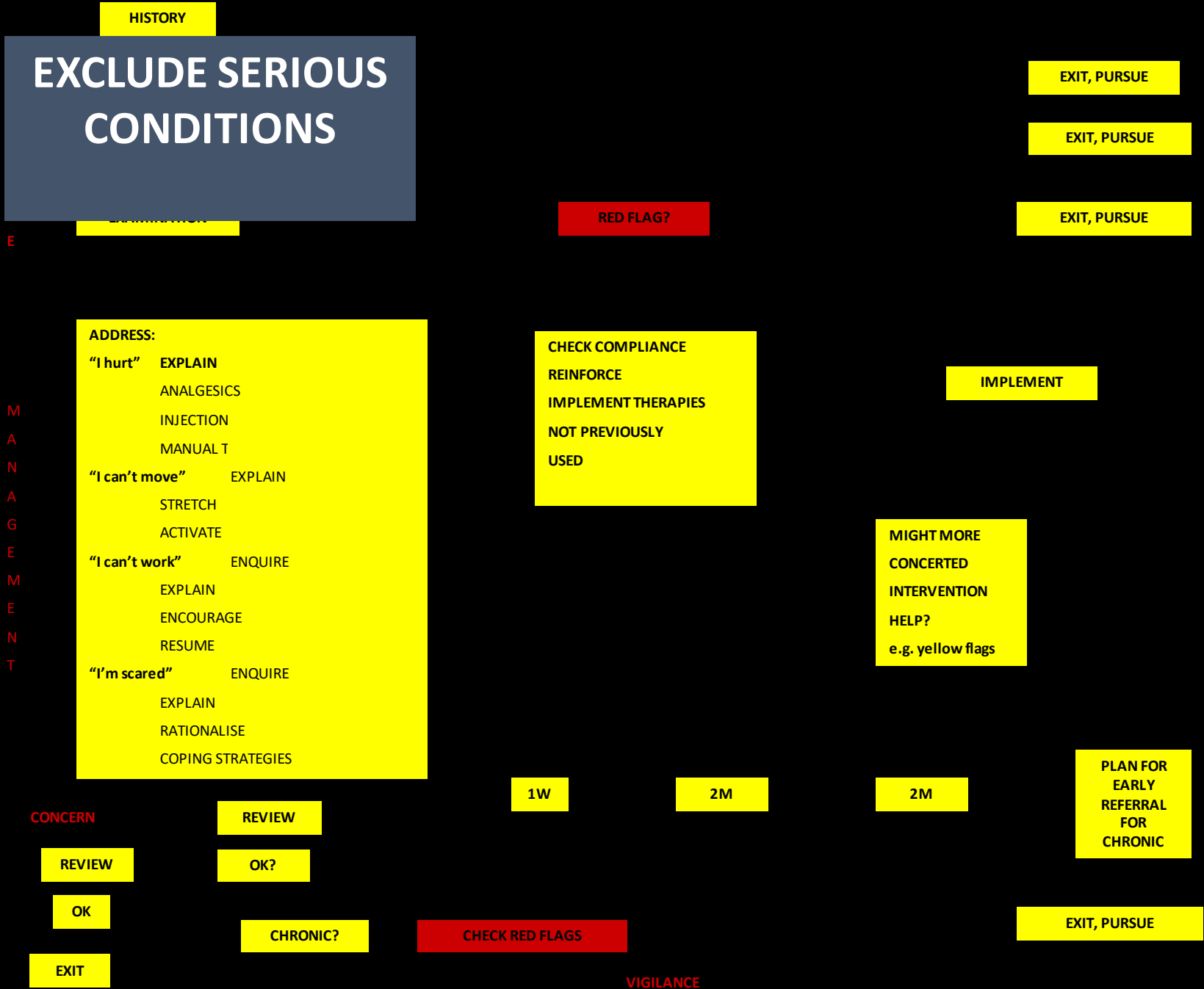
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RED FLAG CHECKLIST

Name:				Low Back Pain							
D.O.B				M.R.N.							
Presence of				Cardiovascular				Endocrine			
Trauma Y N				Risk factors? Y N				Corticosteroids? Y N			
Night Sweats Y N				Respiratory Y N				Musculoskeletal			
Recent Surgery Y N				Cough? Y N				Pain elsewhere? Y N			
Catheterisation Y N				Urinary				Neurological			
Venipuncture Y N				UTI? Y N				Symptoms/signs Y N			
Occupational exposure Y N				Haematuria? Y N				Skin			
Hobby exposure Y N				Retention? Y N				Infections? Y N			
Sporting exposure Y N				Stream problems? Y N				Rashes? Y N			
(Overseas) travel Y N				Reproductive				G.I.T.			
Illicit drug use Y N				Menstrual problems? Y N				Diarrhoea? Y N			
Weight loss Y N				Haematopoietic				Signature:			
History of cancer Y N				Problems? Y N							
Comments											
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HISTORY

NEUROLOGICAL?

RED FLAG?

EXAMINATION

EXIT, PURSUE

EXIT, PURSUE

EXIT, PURSUE

RED FLAG?

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IMMEDIATE MANAGEMENT

CHECK COMPLIANCE
REINFORCE
IMPLEMENT THERAPIES
NOT PREVIOUSLY
USED

IMPLEMENT

MIGHT MORE
CONCERTED
INTERVENTION
HELP?
e.g. yellow flags

CONCERN

REVIEW

1W

2M

2M

PLAN FOR
EARLY
REFERRAL
FOR
CHRONIC

REVIEW

OK?

OK

CHRONIC?

CHECK RED FLAGS

EXIT, PURSUE

EXIT

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HISTORY

ADDRESS:

“I hurt”

EXPLAIN

ANALGESICS

“I can’t move”

EXPLAIN

STRETCH

ACTIVATE

“I can’t work”

ENQUIRE

EXPLAIN

ENCOURAGE

RESUME

“I’m scared”

ENQUIRE

EXPLAIN

RATIONALISE

EXIT, PURSUE

EXIT, PURSUE

EXIT, PURSUE

IMPLEMENT

MIGHT MORE
CONCERTED
INTERVENTION
HELP?
e.g. yellow flags

2M

2M

PLAN FOR
EARLY
REFERRAL
FOR
CHRONIC

EXIT, PURSUE

CHRONIC?

CHECK RED FLAGS

EXIT

VIGILANCE

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CONCERN

HISTORY

NEUROLOGICAL?

RED FLAG?

EXAMINATION

RED FLAG?

EXIT, PURSUE

EXIT, PURSUE

EXIT, PURSUE

ADDRESS:

“I hurt”

EXPLAIN

ANALGESICS

INJECTION

MANUAL T

“I can’t move”

EXPLAIN

STRETCH

ACTIVATE

“I can’t work”

ENQUIRE

EXPLAIN

ENCOURAGE

RESUME

“I’m scared”

ENQUIRE

EXPLAIN

RATIONALISE

COPING STRATEGIES

CHECK COMPLIANCE

REINFORCE

IMPLEMENT THERAPIES

NOT PREVIOUSLY

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IMPLEMENT

MIGHT MORE

CONCERTED

INTERVENTION

HELP?

e.g. yellow flags

1W

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PLAN FOR
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CHRONIC?

CHECK RED FLAGS

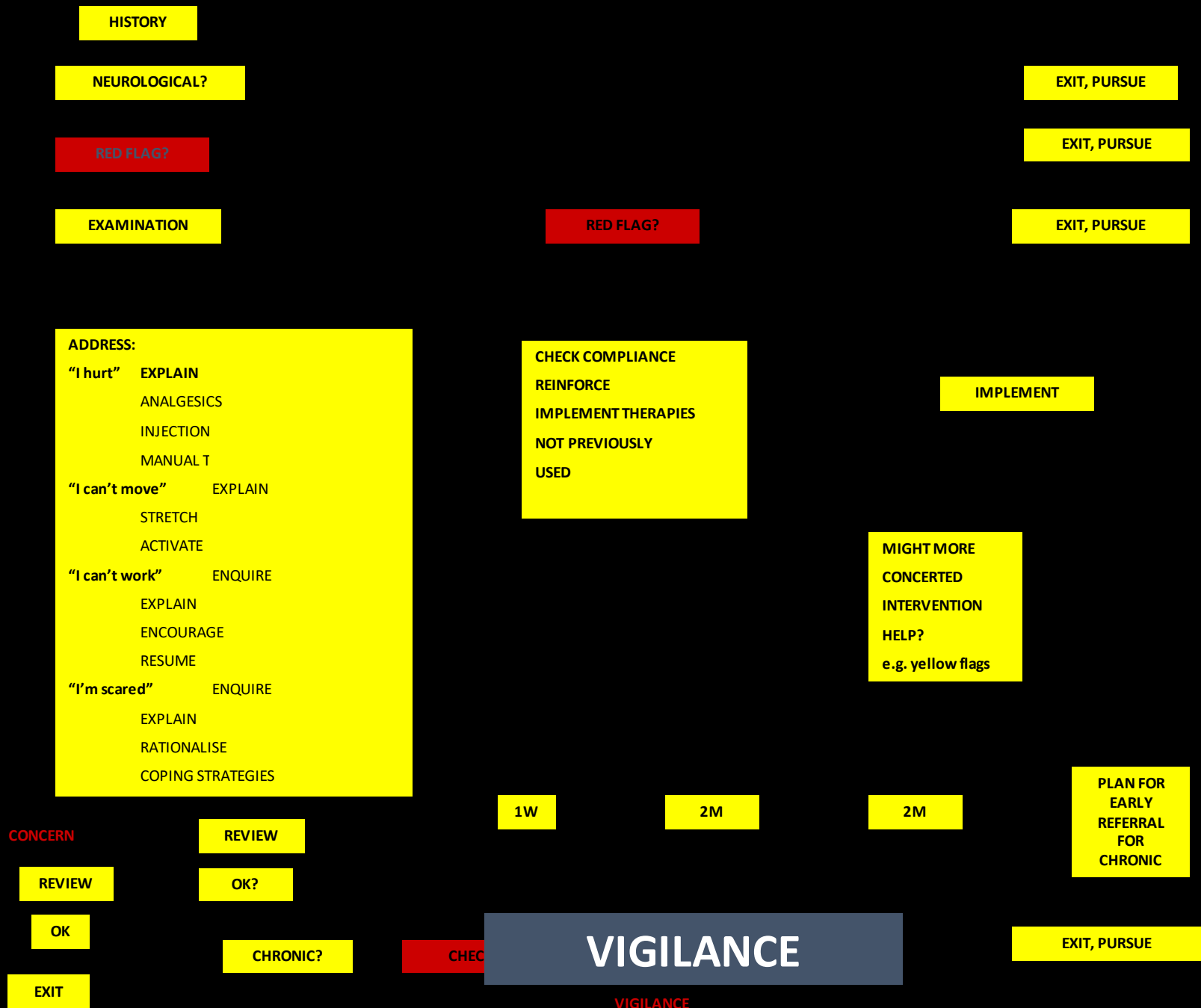
EXIT, PURSUE

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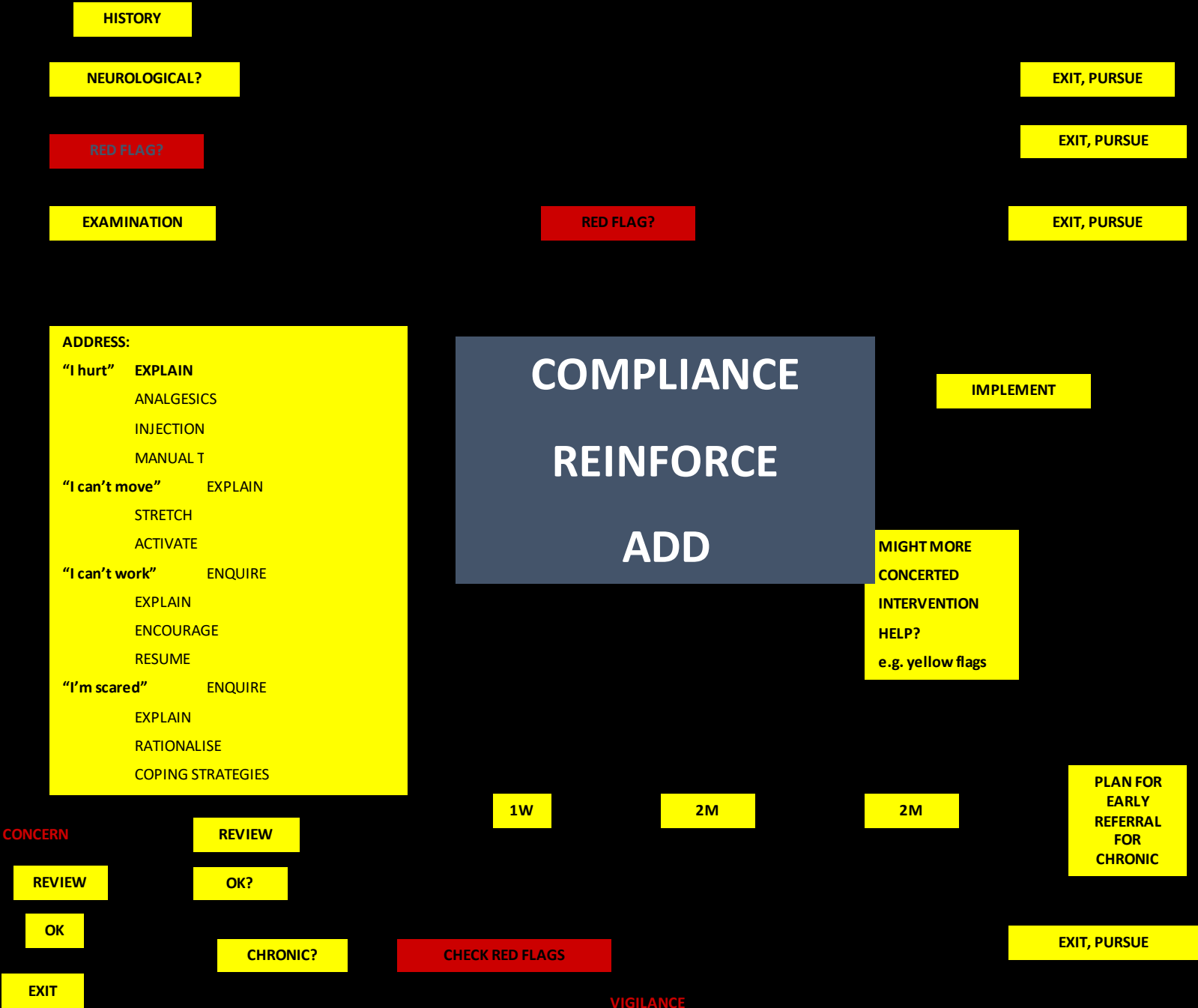


RED FLAG CHECKLIST

Name:		Low Back Pain					
D.O.B		M.R.N.					
Presence of		Cardiovascular		Endocrine			
Trauma	Y N	Risk factors?	Y N	Corticosteroids?	Y N		
Night Sweats	Y N	Respiratory	Y N	Musculoskeletal			
Recent Surgery	Y N	Cough?		Pain elsewhere?	Y N		
Catheterisation	Y N	Urinary		Neurological			
Venipuncture	Y N	UTI?	Y N	Symptoms/signs	Y N		
Occupational exposure	Y N	Haematuria?	Y N	Skin			
Hobby exposure	Y N	Retention?	Y N	Infections?	Y N		
Sporting exposure	Y N	Stream problems?	Y N	Rashes?	Y N		
(Overseas) travel	Y N	Reproductive		G.I.T.			
Illicit drug use	Y N	Menstrual problems?	Y N	Diarrhoea?	Y N		
Weight loss	Y N	Haematopoietic		Signature:			
History of cancer	Y N	Problems?	Y N				
Comments							
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