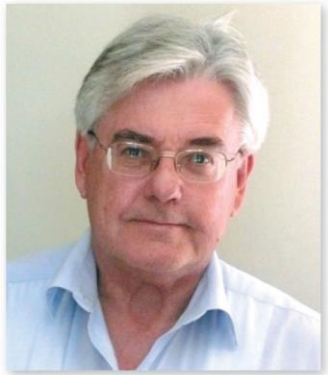

Professor Nik Bogduk

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

Trauma Y N
Night Sweats Y N
Recent Surgery Y N
Catheterisation Y N
Venipuncture Y N
Occupational exposure Y N
Hobby exposure Y N
Sporting exposure Y N
(Overseas) travel Y N
Illicit drug use Y N
Weight loss Y N

History of cancer Y N

Cardiovascular

Risk factors? Y N

Respiratory Y N

Cough? Y N

Urinary

UTI? Y N
Haematuria? Y N
Retention? Y N
Stream problems? Y N

Reproductive

Menstrual problems? Y N

Haematopoietic

Problems? Y N

Endocrine

Corticosteroids? Y N

Musculoskeletal

Pain elsewhere? Y N

Neurological

Symptoms/signs Y N

Skin

Infections? Y N
Rashes? Y N

G.I.T.

Diarrhoea? Y N

Signature:

Comments

Date:

RED FLAG CHECKLIST

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Comments

Cardiovas

Risk facto

Respiratory

Cough?

Urinary

UTI?

H

Retentio

Stream p

Reproduct

Menstrua

Haematopoietic

Problems

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- Overseas travel
- Illicit drug use
- Weight loss
- History of Cancer

RED FLAG CHECKLIST

Cardiovascular

- Risk factors

Respiratory

- Cough

Urinary

- UTI
- Haematuria
- Retention
- Stream problems

Reproductive

- Menstrual problems

Haematopoietic

- Problems

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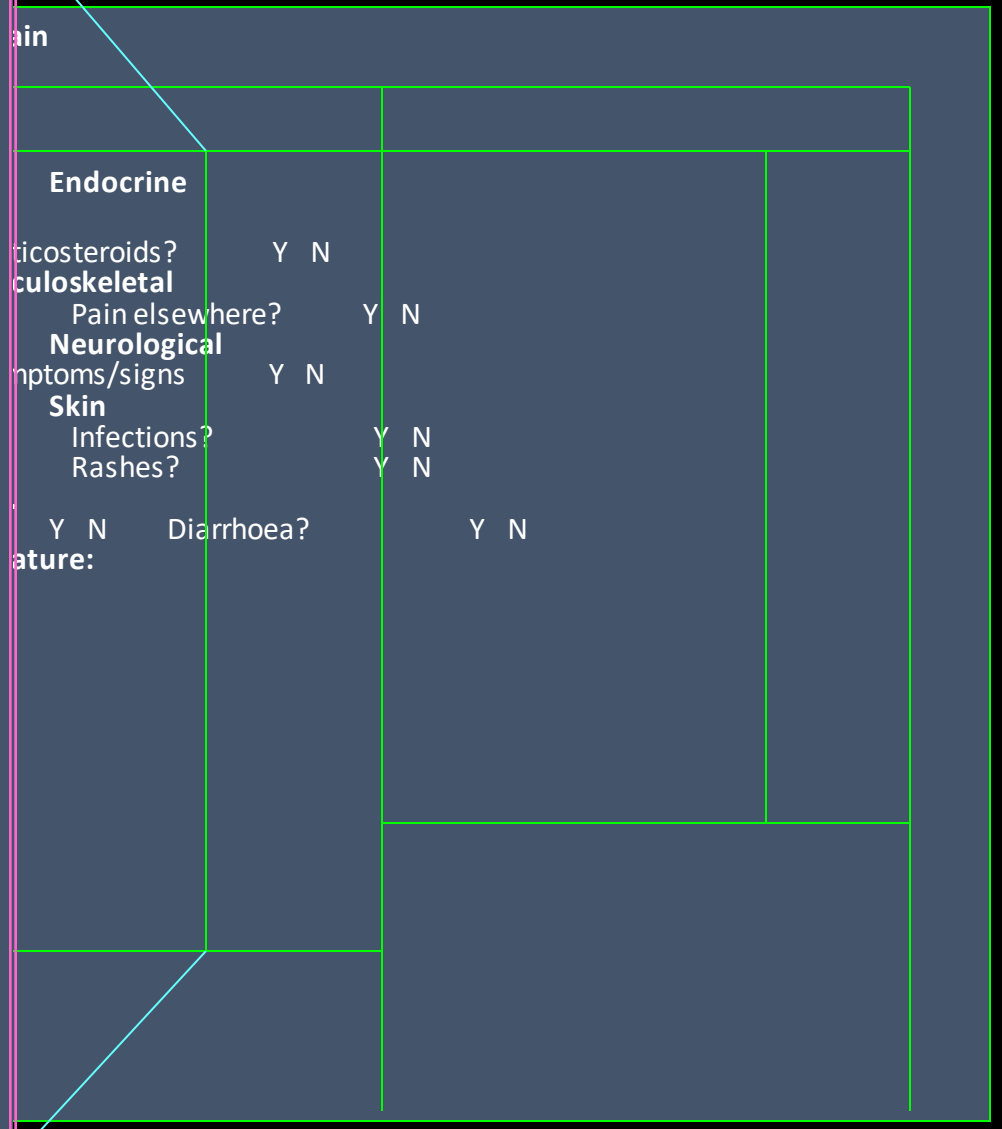

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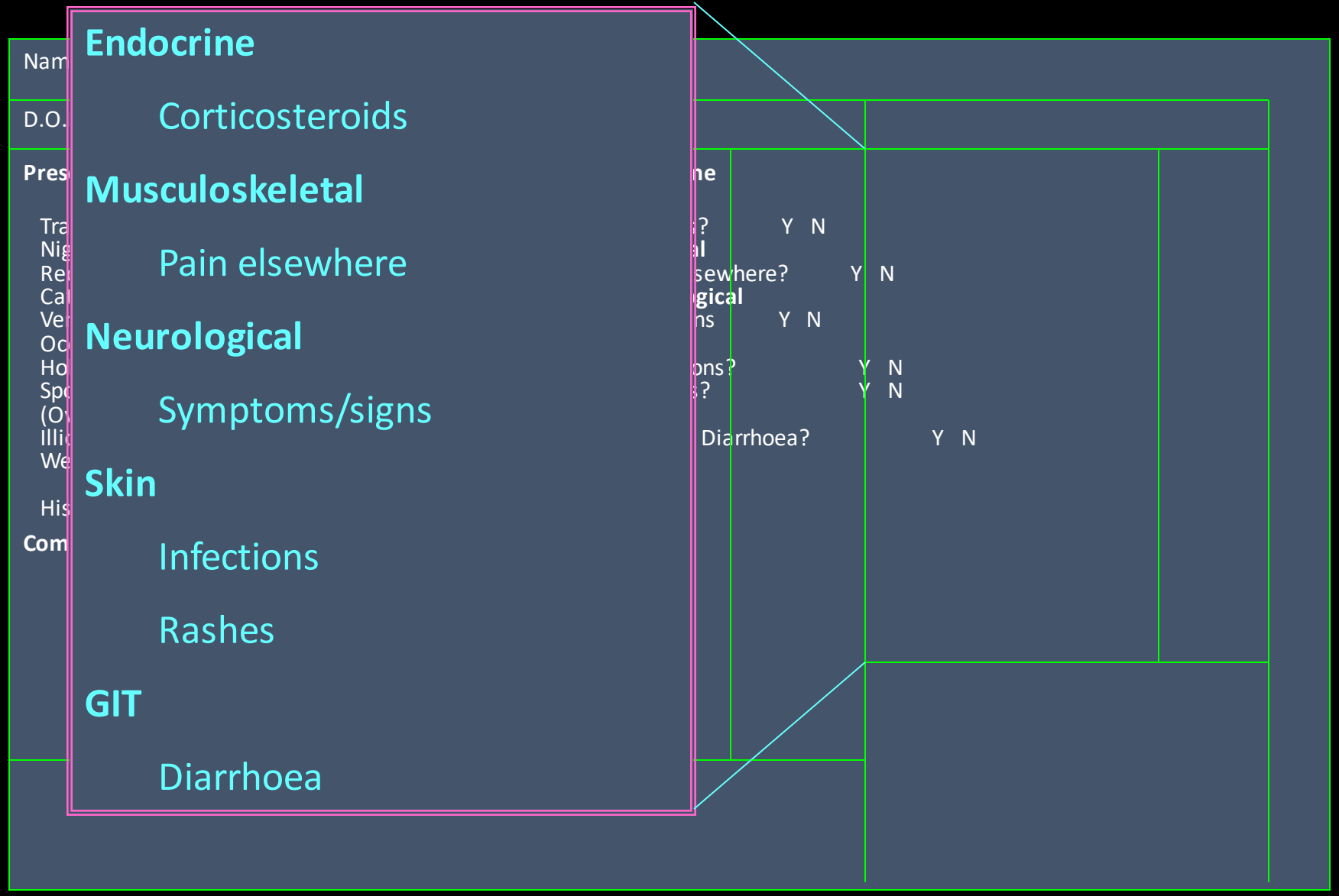

Endocrine

- 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 ISSSUES

ASSESSMENT

HISTORY

RED FLAGS

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PHYSICAL EXAMINATION

ASSESSMENT

HISTORY

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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 study[1]

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 lumboscral 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

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- 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 ≠ pain
spondylosis ≠ 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

A MANAGEMENT ALGORITHM


HISTORY
NEUROLOGICAL?
EXIT, PURSUE
TRIAGE
RED FLAG?
EXIT, PURSUE
EXAMINATION
RED FLAG?
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
USED
IMPLEMENT
MANAGEMENT
MIGHT MORE
CONCERTED
INTERVENTION
HELP?
e.g. yellow flags
1W
2M
2M
PLAN FOR EARLY REFERRAL FOR CHRONIC
CONCERN
REVIEW
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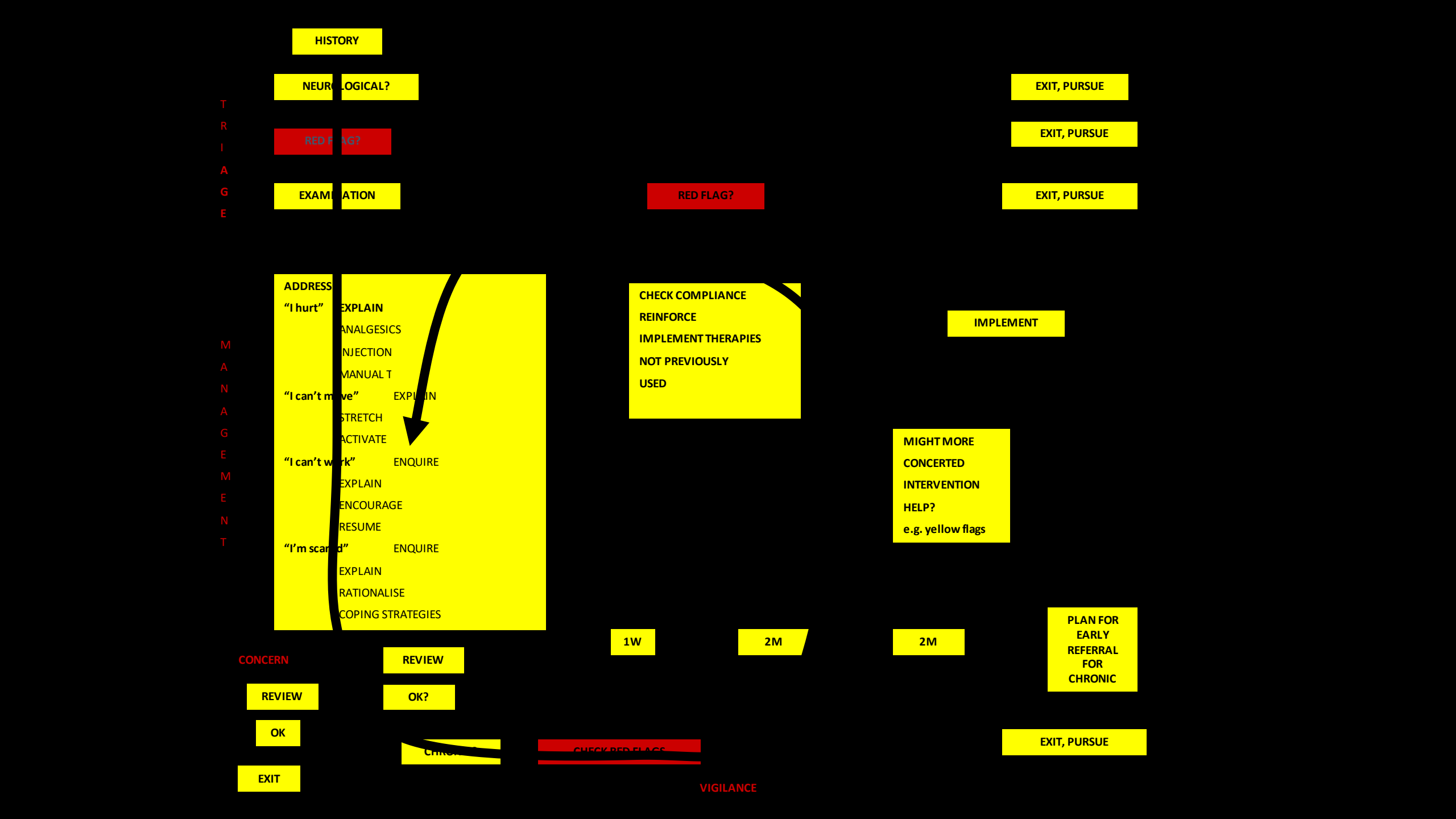
OK?
OK
CHRONIC?
CHECK RED FLAGS
EXIT, PURSUE
EXIT
VIGILANCE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HISTORY

EXCLUDE SERIOUS CONDITIONS

EXAMINATION

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EXIT, PURSUE

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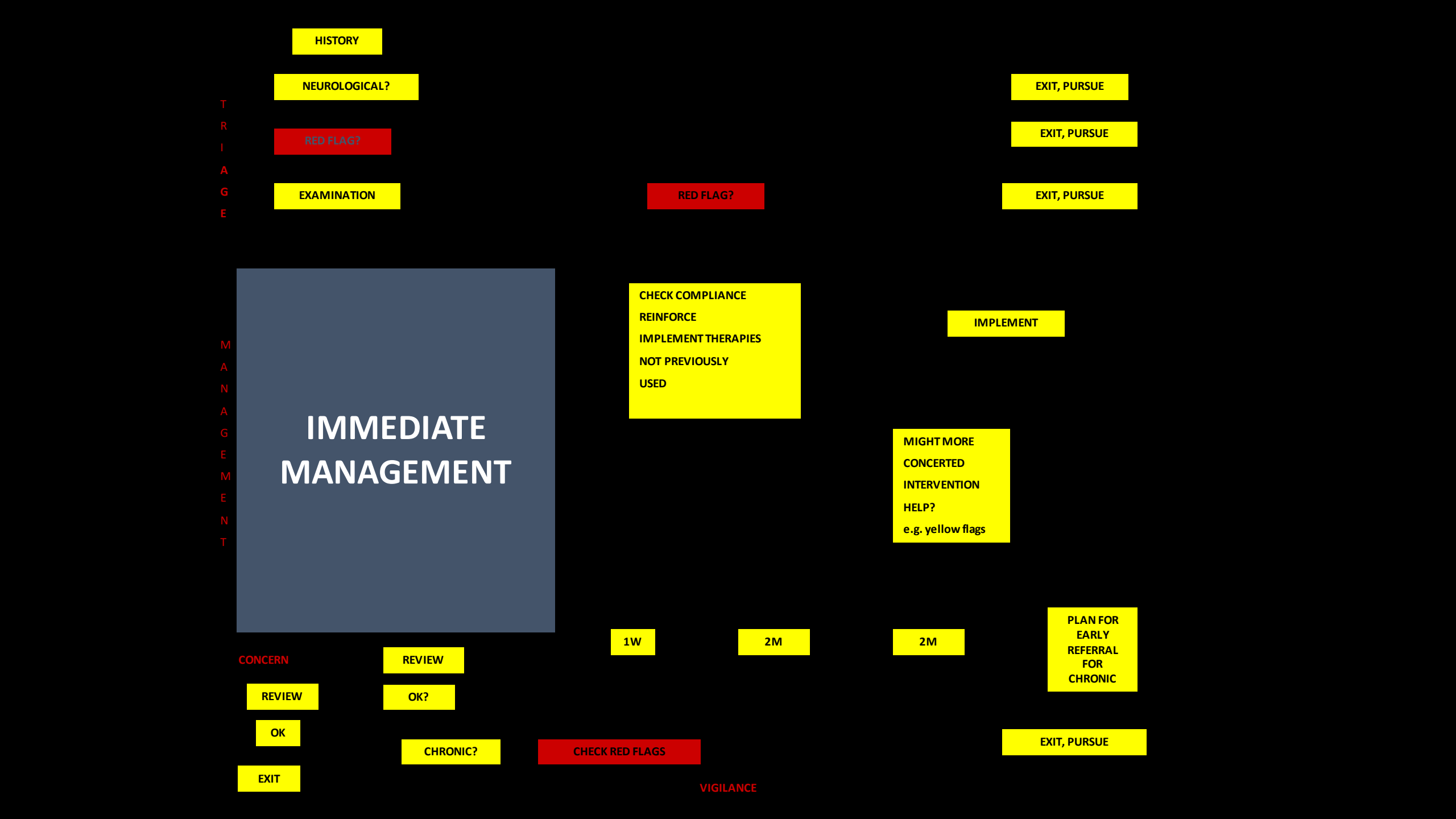
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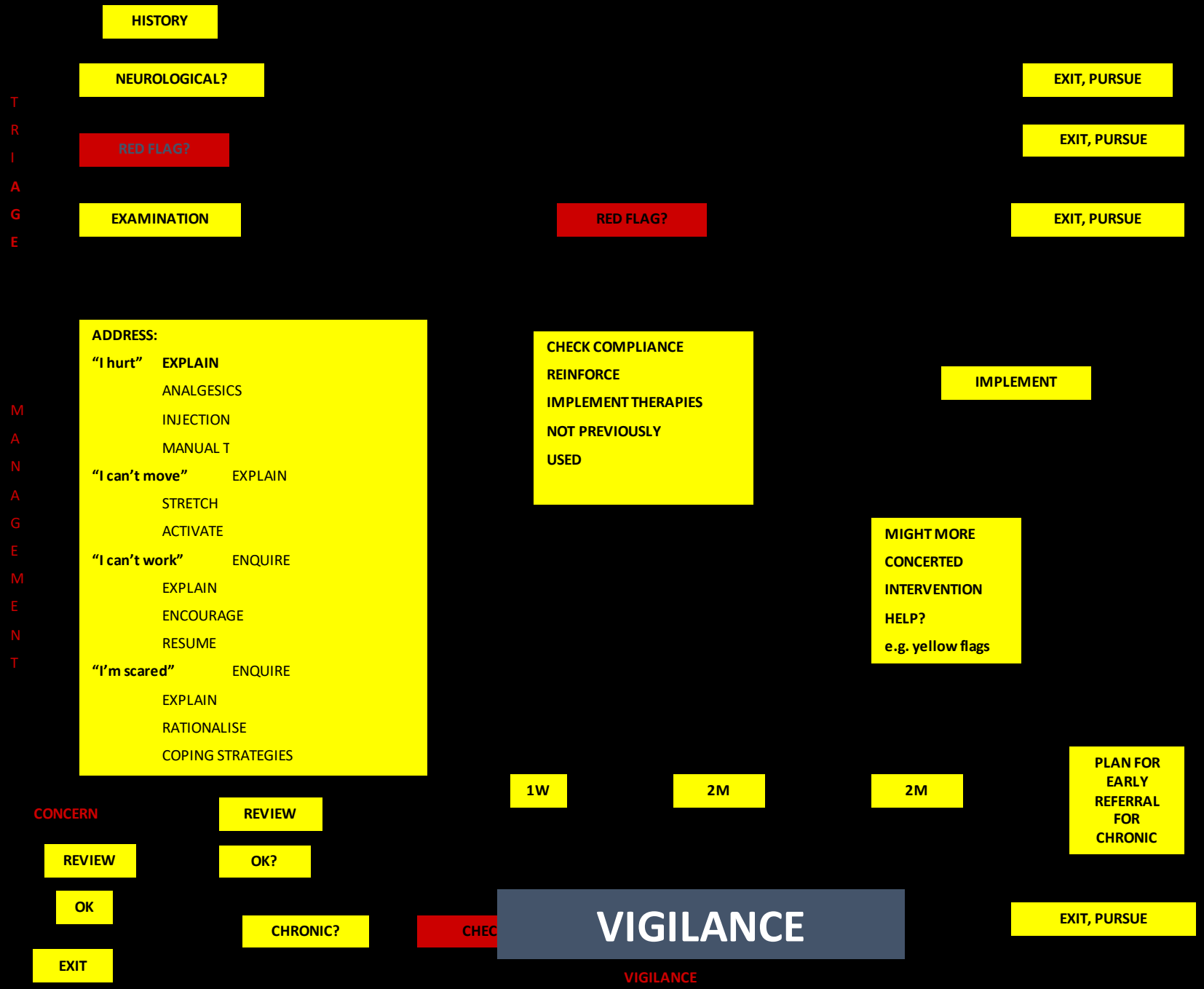
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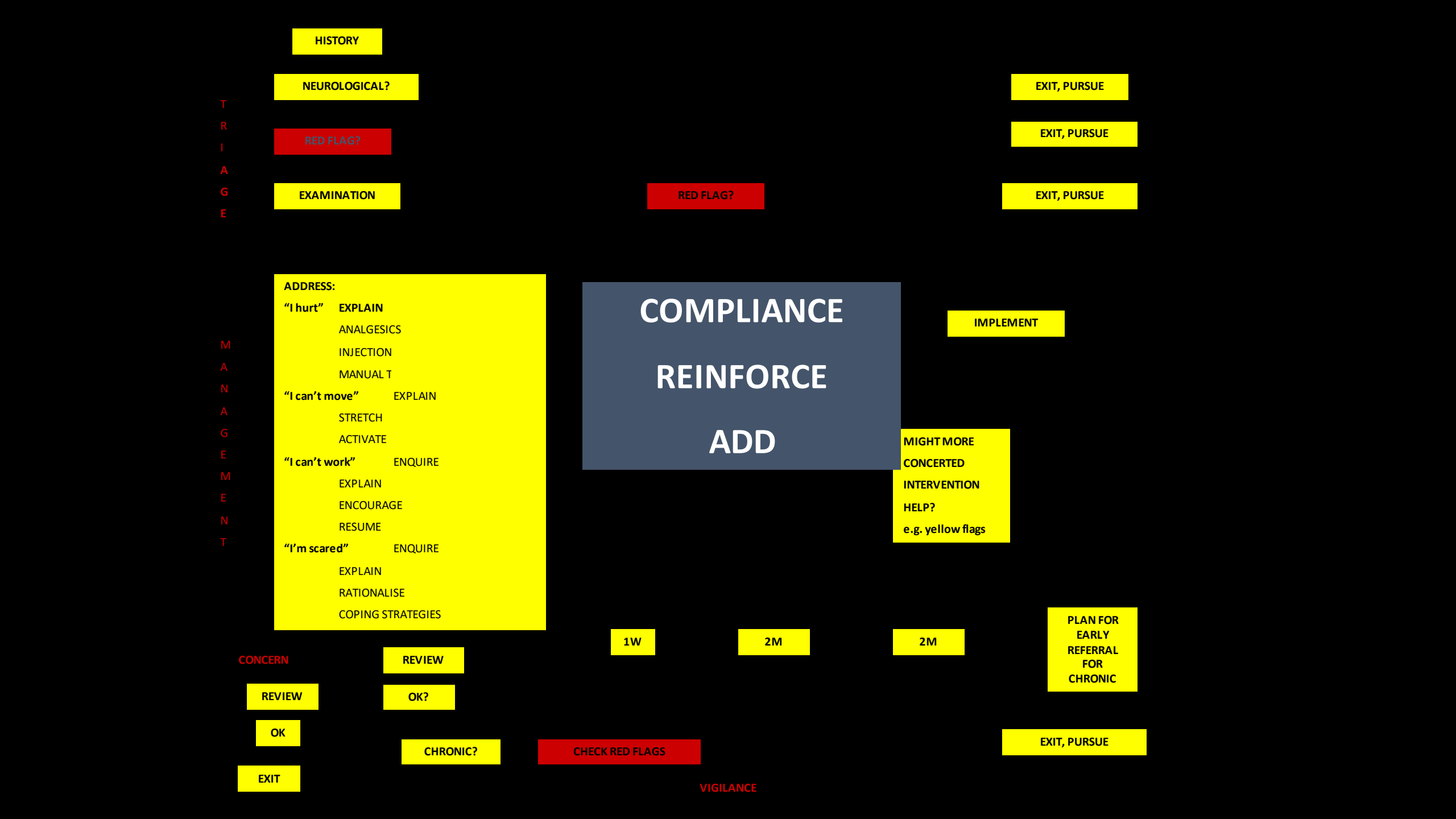
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