

# Implementation evaluation and refinement of an intervention to improve blunt chest injury management

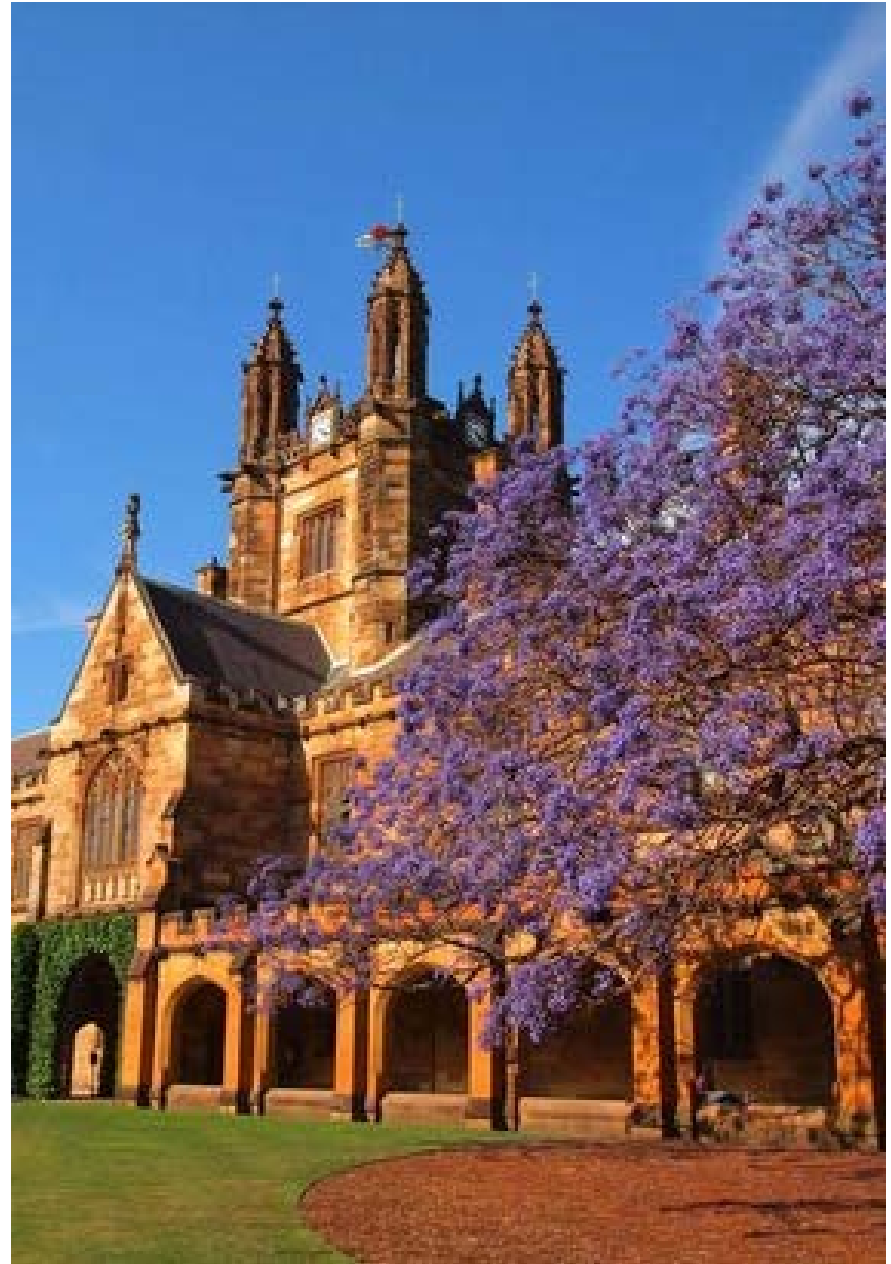
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2017

 @redtraumakate

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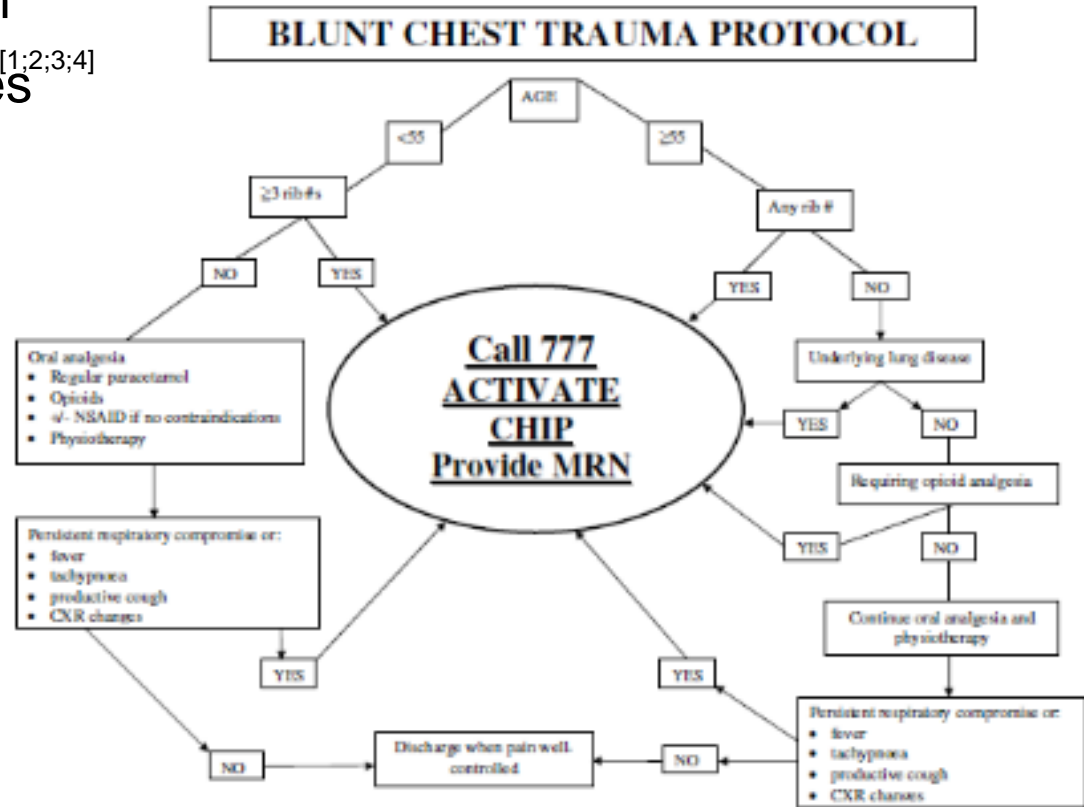
## Example

- 89yo male, fall stairs, intoxicated
- # R ribs 1-5 with flail segment, consolidation RLL, CHI, skin tears
- PMHx: COPD, HT, prev ICU admission pneumonia x 2
- Obs: RR 24bpm, SpO2 95% RA, HD stable



# ChIP: Chest Injury Protocol

- Evidence based intervention
  - Fewer than 3 rib fractures<sup>[1;2;3;4]</sup>
  - Elderly
  - Underlying respiratory disease
  - Clinical rib fractures
- Multi-disciplinary response
  - Trauma team review
  - Pain team review
  - Physiotherapy



[1] Todd et al., 2006; [2] Menditto et al., 2012; [3] Sesperez et al., 2001; [4] Sahr et al., 2013

# Implementation strategy - multiple templates

- Complex, planning and strategy
- PARIHS Framework
- Implementation process ++ (ED, ICU, Trauma, pain, physio, education, implementation plan (key stakeholders etc etc))

# Results


## – Increased

- pain team review
- trauma team review
- faster physiotherapy review
- PCA, HFNP

## – Reduced odds

- Pneumonia (56%)
- NIV.....
- ICU.....

Contents lists available at [ScienceDirect](#)



**Australasian Emergency Nursing Journal**

journal homepage: [www.elsevier.com/locate/aenj](http://www.elsevier.com/locate/aenj)

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Research paper

**ChIP: An early activation protocol for isolated blunt chest injury improves outcomes, a retrospective cohort study**

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# Implementation evaluation

- Uptake
  - 68.4% received CHIP
  - Less HFNP, Physio, Pain team
- Patients different?



# Implementation evaluation

Characteristics	No ChIP (N=134, 31.6%)	Yes ChIP (N=290)	p value
	Median	Median	
Age (years)	81.0	79.50	<0.001
ISS	4.0	5.00	0.466
AIS score chest	2.0	1.00	0.308
Number of radiological rib fractures	1.0	.00	0.476
Time from injury to arrival (hours)	8.8	8.38	0.422
		1.00	0.009
		4 (6.2)	0.395
		(2.8)	0.012
		(2.1)	0.581
		7 (85.2)	0.003
		7 (5.9)	0.152
		2 (4.1)	0.255
		29 (79)	0.280



## Going to see

1. Examine the patient
2. Make a diagnosis
3. Prescribe treatment

***Would you want to be given a prescription by your GP without a thorough assessment and diagnosis?***



..and so with designing interventions to change behaviour

1. Examine the problem or do a **behavioural analysis**
2. Make a **behavioural diagnosis**
3. Prescribe a treatment or **design an intervention based on the behavioural diagnosis**

# Steps for a theory-informed implementation intervention

## Developing theory-informed behaviour change interventions to implement evidence into practice: a systematic approach using the Theoretical Domains Framework

Simon D French<sup>1,2\*</sup>, Sally E Green<sup>1</sup>, Denise A O'Connor<sup>1</sup>, Joanne E McKenzie<sup>1</sup>, Jill J Francis<sup>3</sup>, Susan Michie<sup>4</sup>, Rachelle Buchbinder<sup>1,5,9</sup>, Peter Schattner<sup>6</sup>, Neil Spike<sup>6</sup> and Jeremy M Grimshaw<sup>7,8</sup>

1

- Who needs to do what, differently?

2

- Using a theoretical framework, which barriers and enablers need to be addressed?

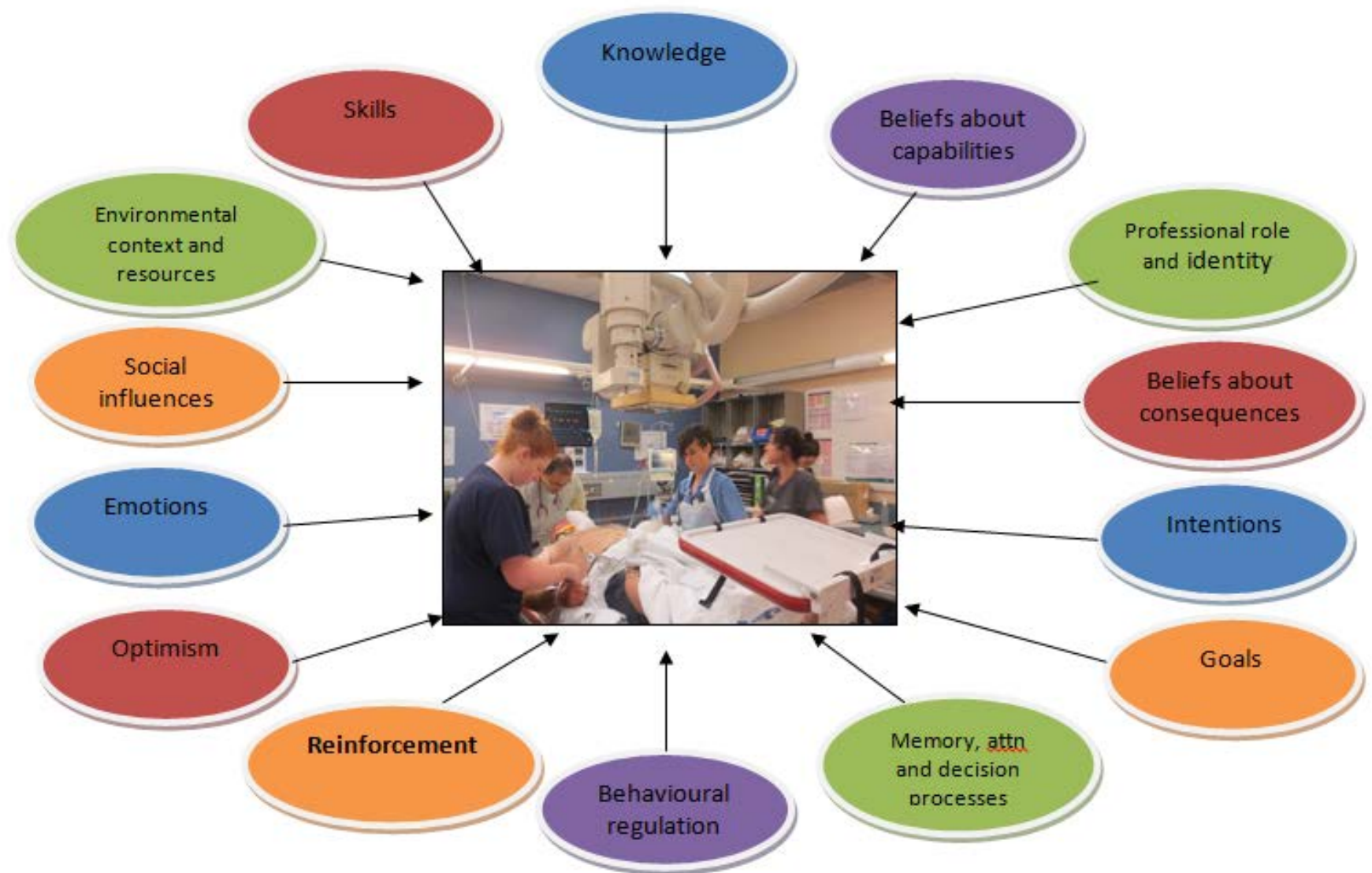
3

- Which intervention components (behaviour change techniques and mode(s) of delivery) could overcome the modifiable barriers and enhance the enablers?

4

- How can we measure behaviour change?

# Theoretical domains framework

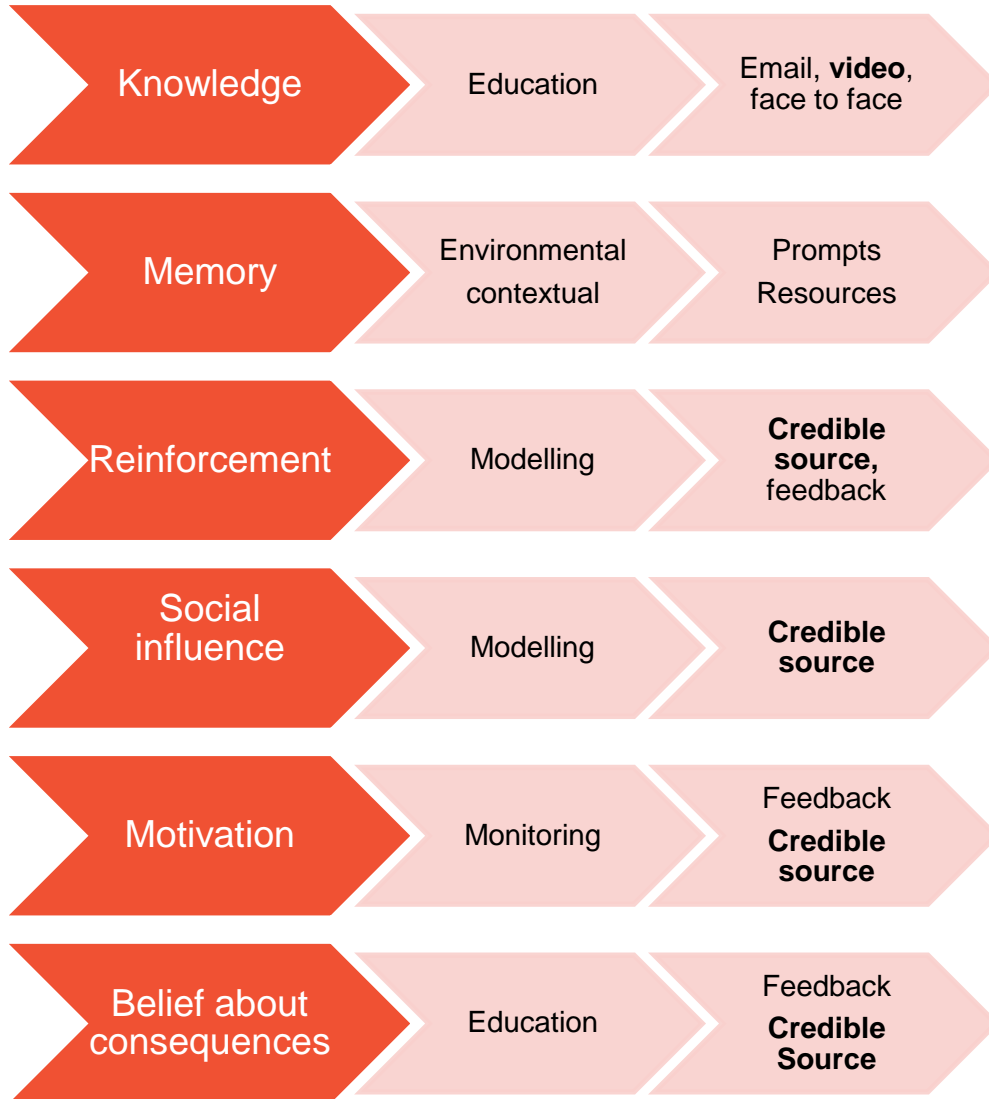


## Step 1: Understanding the behaviour

- Electronic survey – 100 staff
  - TDF mapped to the BCW
  - (Michie et al. 2011, Implementation Science)
- 15 facilitators + 10 barriers
  - Knowledge
  - Memory
  - Belief about consequences
  - Reinforcement
  - Social influences
  - Motivation
- Activators and responders
  - *encouraged to activate by staff specialists, improves response time*
  - *Did not know what CHIP was, remembering to activate, protocol too complex, did not provide clinical advice, responders were rude, shift is too busy to respond, I wasn't really needed (physio)*



## Step 2: Mapping behaviours to interventions



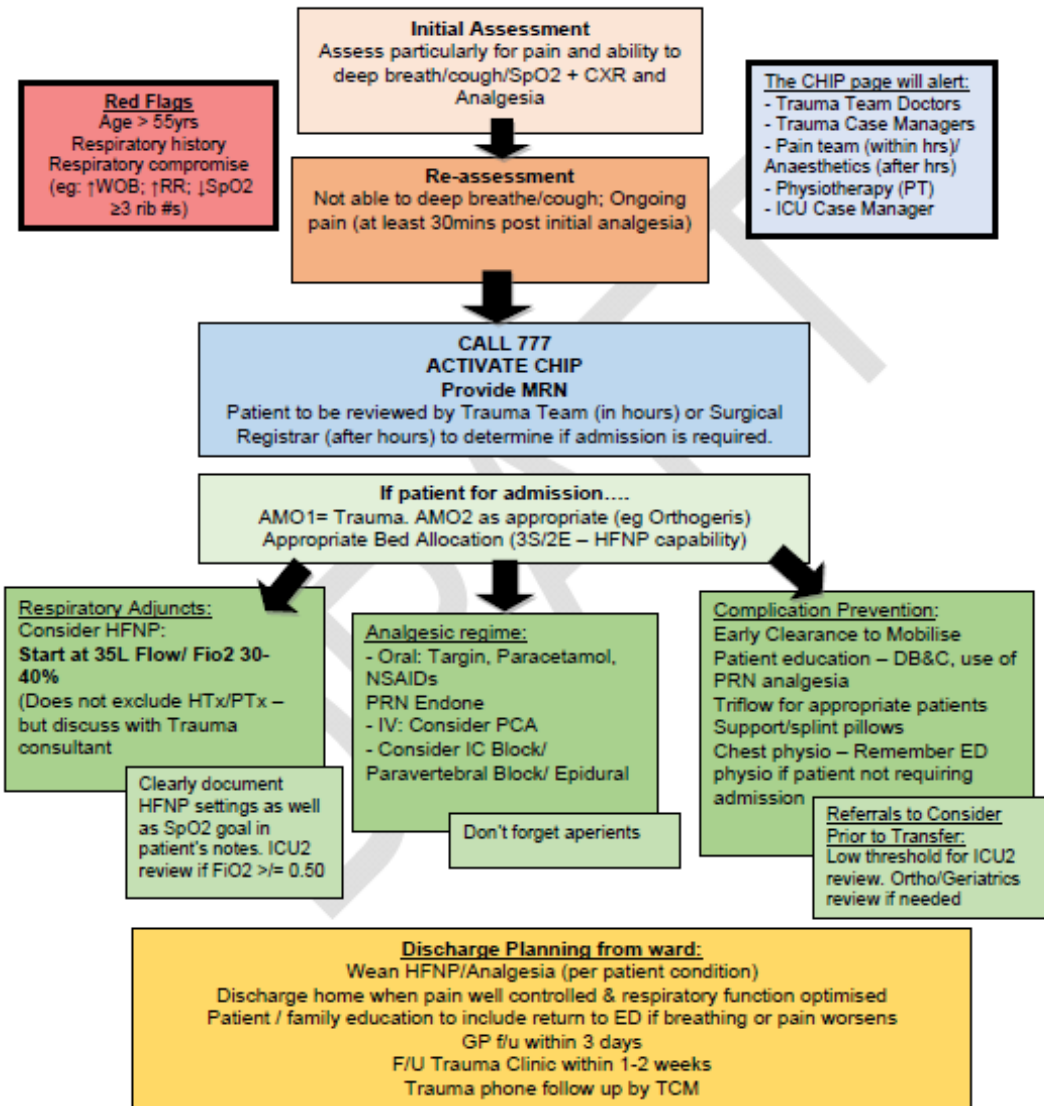
## Step 3: Strategy development

- Uptake / implementation evaluation
  - Revise protocol
  - Improve feedback and monitoring
  - Education
  - Information / empowerment
  - Credible sources
  
- Relaunch
  - Consultation
  - Ideas

[http://www.seslhd.health.nsw.gov.au/Trauma/policies/Early\\_Notification\\_Management\\_%20Blunt\\_Chest\\_Injury\\_CHIP\\_SGH\\_CLIN339.pdf](http://www.seslhd.health.nsw.gov.au/Trauma/policies/Early_Notification_Management_%20Blunt_Chest_Injury_CHIP_SGH_CLIN339.pdf)

Appendix 1

ISOLATED BLUNT CHEST INJURY FLOWCHART



BLUNT CHEST TRAUMA PROTOCOL



**Got a patient in ED with chest wall pain? Video**

**(Not available. Please request this from the author)**



## Appropriate activation

68% ↑ 96%

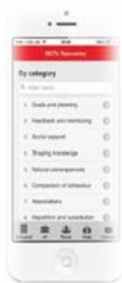
# UCL Centre for Behaviour Change

- Academic consultancy
- Research collaborations
- Bespoke workshops, training and webinars
- International Summer School
- Academic courses (MSc Behaviour Change launching 2017)
- Books and products



[www.behaviourchangewheel.com](http://www.behaviourchangewheel.com)

FREE on iTunes + Android



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