Feasibility study of a novel pain assessment tool for improving prehospital pain management

M Iqbal, P A Spaight, R Kane, Z Asghar, A N Siriwardena

Nottingham Conference Centre

04 February 2015

East Midlands Ambulance Service NHS
NHS Trust

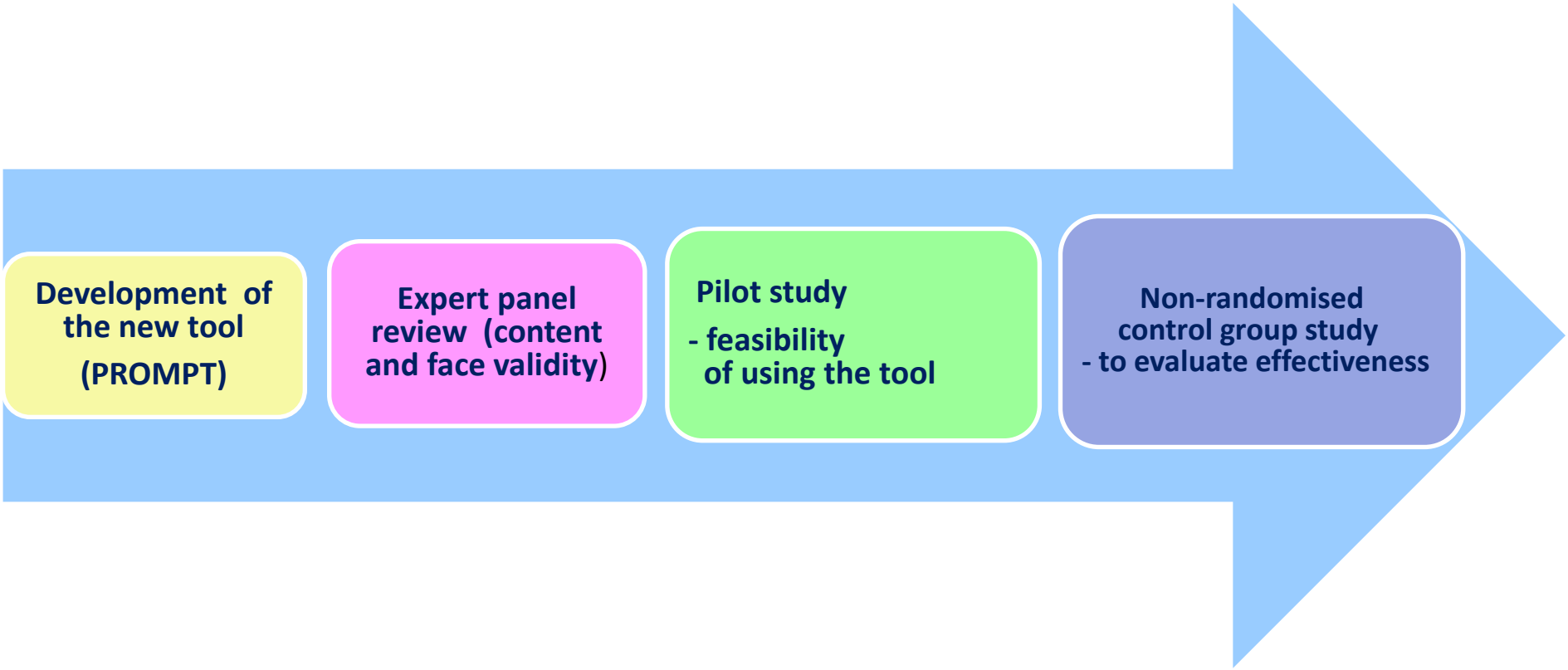
Background

- ***Pain*** - common
- Poorly assessed
- Outcomes affected
- Previous research

Study aims

- To develop and test a novel pain assessment tool the Patient Reported Outcome Measure for Pain Treatment (PROMPT)

- To determine feasibility, reliability and validity of the PROMPT


Development of the new tool (PROMPT)
Expert panel review (content and face validity)
Pilot study
- feasibility of using the tool
Non-randomised control group study
- to evaluate effectiveness

Development of the tool

Secondary Analysis – qualitative data

Preliminary study:

Qualitative data - Focus Groups (5), Interviews(28)

thematic content analysis

Literature review

- Pain and pain management
- Outcome measures
- Development / validation tool

Patient Reported Outcome Measure for Pain Treatment (PROMPT)

Patient and practitioner Reported Outcome Measure for Pain Treatment (PROMPT)

1.a. **How much discomfort is the pain causing you?**

Before					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

Intervention

Drug Rx
Morphine
Entonox
Paracetamol
Oxygen
Other
None
Pt refused

1.b. **How much discomfort is the pain causing you now?**

After					
None	Mild	Moderat	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

2.a. **How much anxiety is the pain causing you?**

Before					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

2.b. **How much anxiety is the pain causing you no**

After					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

3.a. **How much is the pain affecting your movement?**

Before					
None	Mild	Moderate	Severe	V Severe	Worse
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

Intervention

Non-drug Rx
Reassurance
Positioning
Splint
Support
None
Pt refused

3.b. **How much is the pain affecting your movement now?**

After					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

4.a. Pain severity (global)?

Before	
Pain score	**0 to 10**
Patient rating	
Clinical rating	

4.b. Pain severity (global)?

After	
Pain score	**0 to 10**
Patient rating	
Clinical rating	

Expert panel review

Panel member selected

- EMAS Clinicians – experience and length of service > 5 years

Review Pack - sent (18 EMAS clinicians)

- PROMPT, review form

Reply received - 10

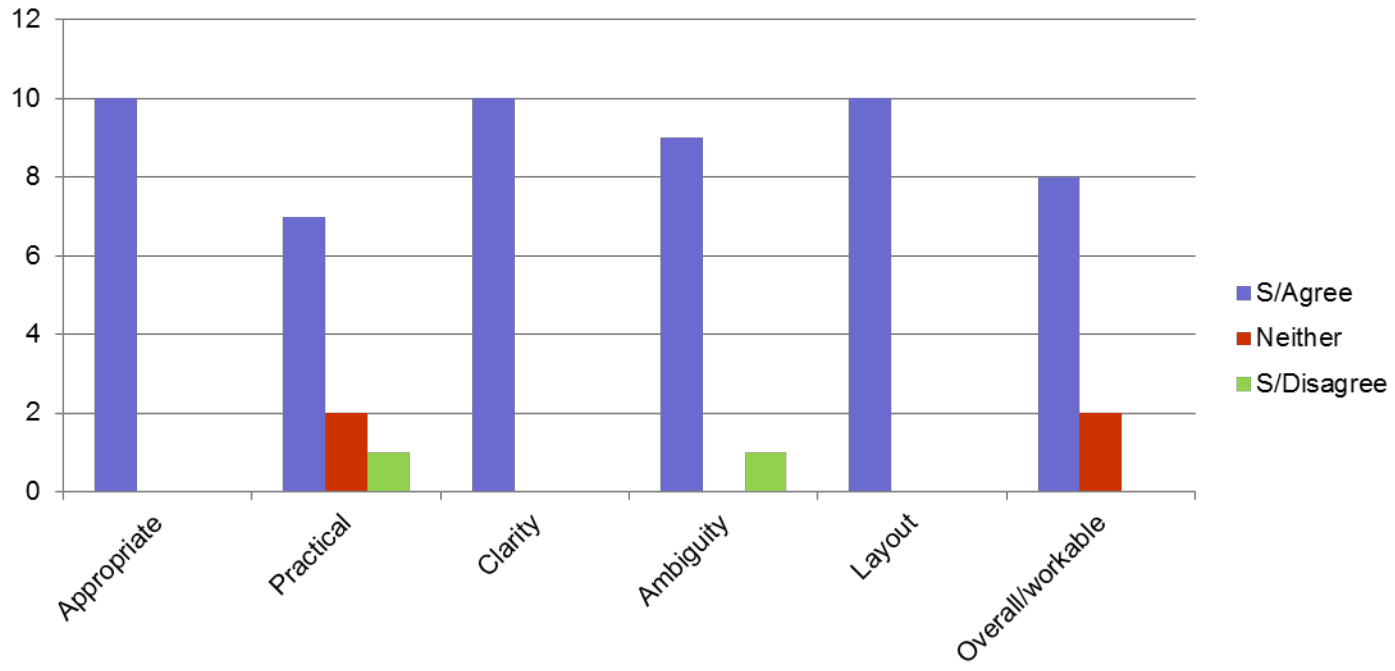
Analysis –
- ✓ Face validity
- ✓ Content validity

→ **Findings** →

Decision
- **Items confirmation include / exclude**

Expert panel review findings 1

Section A –
appropriateness, ***practical***, ***clarity***, ***ambiguity, layout*** and ***workable*** state of the tool



Expert panel review findings 2

- Lawshe's Content Validity Ratio (CVR) Methodology
- Formula $$CVR = \frac{n_e - N/2}{N/2}$$

n_e = number of panel members rating an item - "essential"

N = total number of panel members

- CVR closer to +1 → item more essential
- CVR closer to -1 → more non-essential

- CVR - all items close to (+)1
  except **PS by clinician's rating** weak (-0.4)

1.a. How much **discomfort** is the pain causing you?

Before					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

1.b. How much **discomfort** is the pain causing you now

After					
None	Mild	Moderat	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

Intervention

Drug Rx
Morphine
Entonox
Paracetamol
Oxygen
Other
None
Pt refused

2.a. How much **anxiety** is the pain causing you?

Before					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

2.b. How much **anxiety** is the pain causing you now?

After					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

3.a. How much is the pain affecting your **movements**?

Before					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

Intervention

Non-drug Rx
Reassurance
Positioning
Splint
Support
None
Pt refused

3.b. How much is the pain affecting your **movements**

After					
None	Mild	Moderate	Severe	V Severe	Worst
0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10

4.a. Pain severity (global)?

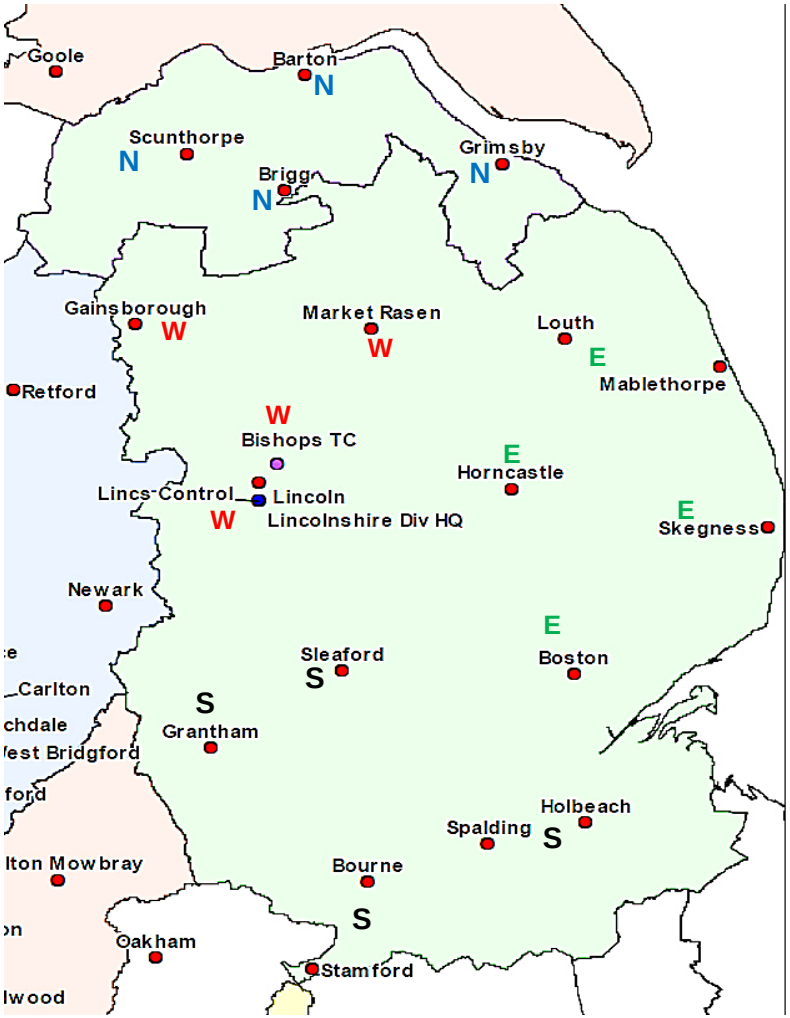
Before	
Pain score	0 to 10
Patient rating	

4.b. Pain severity (global)?

After	
Pain score	0 to 10
Patient rating	

Pilot study

- Aim - to determine the feasibility, reliability and validity of the PROMPT
- Settings: East (Lincolnshire) Division of EMAS
- Participant and recruitment
  - EMAS paramedics : emails & memos
  - 36 paramedics expressed interest
  - 20 paramedics – took part in orientation training
- Orientation training



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- E - East area
- **W** - West area
- **N** - North area
- **S** - South area

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Data collection and analysis

- Pilot data
  - 18 paramedics – finally participated
  - 146 completed data forms
  - 132 had electronic data

- Baseline data
  - 3 months routine clinical data (from electronic records)

- Analysis
  - data entered in SPSS for analysis
    (comparing change in pain score and use of analgesic using regression)

Results

- Cronbach's alpha >0.8
- Spearman's correlation 0.81 before and 0.83 after treatment given for pain

Table 1 Patient characteristics in pilot study compared with baseline

	Baseline N=1776			Pilot study N=132		Chi square
	N	%		N	%	
Variables						
Age						
up to 20	49	(2.8)		6	(4.5)	P=0.24
21 to 40	259	(14.6)		17	(12.9)	
41 to 60	394	(22.2)		37	(28.0)	
61 to 80	562	(31.6)		44	(33.3)	
over 80	495	(27.9)		28	(21.2)	
Sex						
Male	885	(49.8)		56	(42.4)	P=0.10
Clinical conditions						
Chest pain	732	(41.2)		73	(55.3)	P=0.002
Injury/Trauma	1044	(58.8)		59	(44.7)	

Totals are less than 100% due to missing data

Table 2 Analgesics use comparing pilot with baseline

	Baseline (N=1776)			Pilot study (N=132)		P *
	N	%		N	%	
Analgesic	574	**(32.3)**		85	**(64.4**)	<0.001
Morphine	353	**(19.9)**		51	**(38.6)**	
Entonox	262	**(14.8)**		42	**(31.8)**	
Paracetamol	74	**(4.2)**		25	**(18.9)**	

* Taking into account age, sex and clinical condition

Table 3 Outcome of pain score following intervention for pain management comparing pilot with baseline

	Baseline N=1776			Pilot study N=132		P *
	N	%		N	%	
Change in pain score						
Decreased	614	**(34.6)**		113	**(85.6)**	
Increased	54	(3.0)		1	(0.7)	P<0.001
No change	531	(29.9)		18	(13.6)	

Totals are less than 100% due to missing data

* Taking into account age, sex and clinical condition

Conclusions

PROMPT : reliable and feasible with content and predictive validity

Next steps

Non-randomised control group study investigating effectiveness PROMPT compared with TAU in reduction of pain in people presenting with chest pain or injury/trauma

Acknowledgements

Patient and Paramedic – participants
Panel members , Clinical Quality Managers, Team Leaders - EMAS

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THANK YOU!