

# Provision of acupuncture for people with pain in Australian Emergency Departments

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# Outline

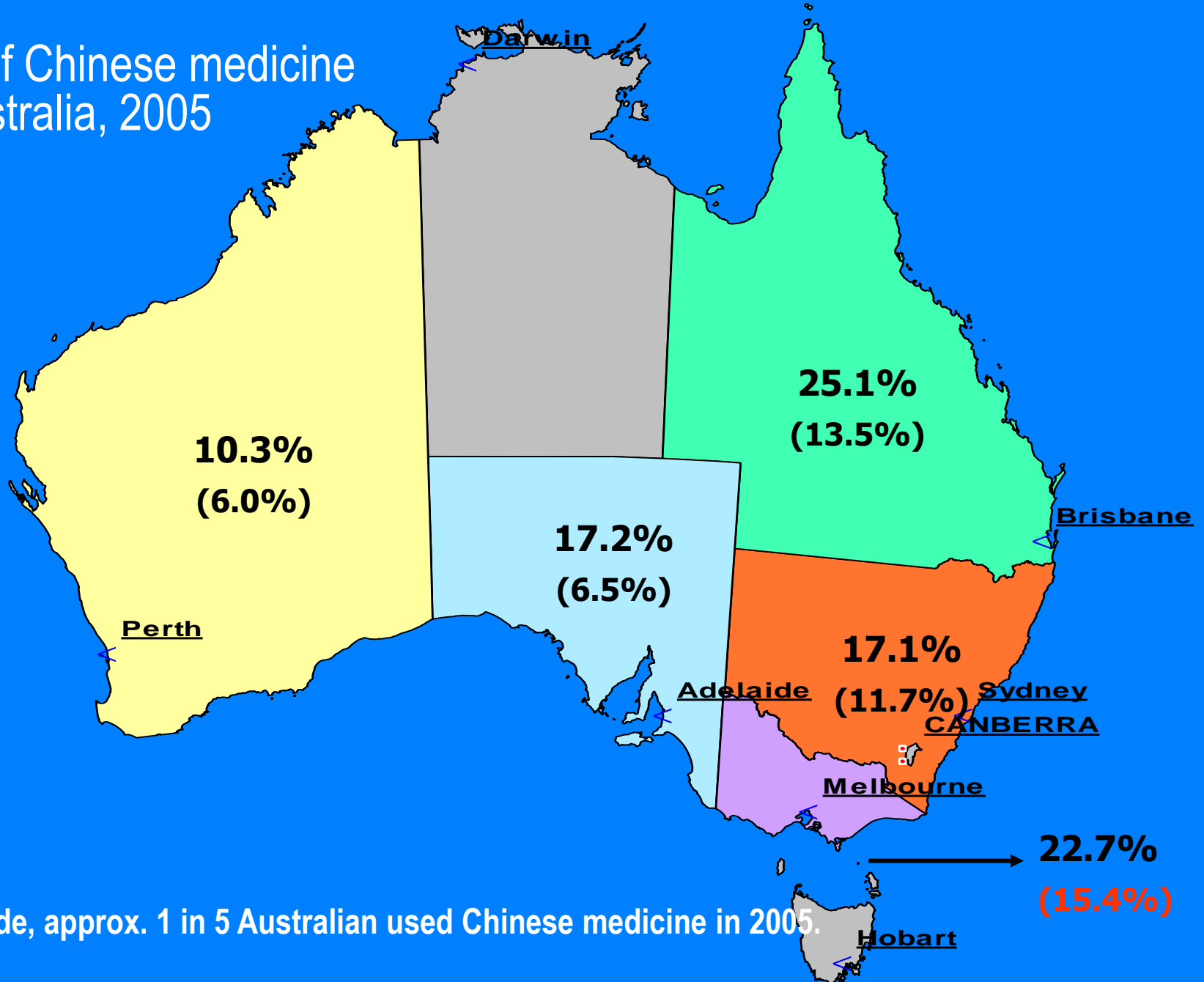
1. Population survey - CAM use in Australia
2. Literature review of acupuncture use in the emergency departments in hospitals and evidence for pain management
3. Government funded pilot study of acupuncture in an ED – student placement, clinical observation: A feasibility study
4. Surveyed ED medical staff's view on acupuncture use in the ED
5. Developed and implemented a protocol for a randomised single blind controlled trial of acupuncture as analgesia in hospital ED's (NHMRC funded)
6. General comments

# Acupuncture usage in Australia

## Acupuncture

- ❖ A regulated profession in Victoria since 2000 and nationally from July 2012 under the Chinese Medicine Board of Australia
- ❖ One of the most commonly used forms of complementary therapies used by the medical profession and other allied health professionals
- ❖ Nearly one in ten (9.2%) Australians used acupuncture in a 12-month period. Australians made over 10 million visits to acupuncturists p.a. (Xue et al 2007, JACM).
- ❖ Nearly one in five (18%) general medical practitioners practise acupuncture as part of their primary care practice; and
- ❖ 76% of medical practitioners referred patients to acupuncturists at least once a month (Cohen et al 2005, JACM).

# Use of Chinese medicine in Australia, 2005



Nationwide, approx. 1 in 5 Australian used Chinese medicine in 2005.

# Indications for acupuncture – WHO recommendations (2002)

- **Bodily pain:**
  - **Facial pain, dental pain, temporal mandibular joint disorder, headache, neck pain**
  - **Peri-arthritis of shoulder, tennis elbow**
  - **Knee pain, low back pain, sciatica**
  - **Rheumatoid arthritis**
  - **Sprain**
- **Postoperative pain**
- **Visceral pain**
  - **primary dysmenorrhoea, acute epigastric pain, biliary colic, renal colic**

# Acute Pain Management

Acute pain is one of the most common symptoms attending EDs. In UK, of the 13 million ED visits each year, around 25% with some form of acute pain symptom.

(Meikle J. 2005.[www.guardian.co.uk/medicine/story/0,11381,1544615,00.html](http://www.guardian.co.uk/medicine/story/0,11381,1544615,00.html))

Use of wide spectrum of pain-relief methods including analgesic drugs, local anaesthesia, and non-pharmacologic methods of pain relief.

Studies show inadequate pain management are often observed in EDs.

(Grant et al, 2006, The American Journal of Emergency Medicine)

# Health Resource Utilization

- Since 1984, acupuncture has been reimbursed by the Australian National Health System under the Medicare Benefits Scheme (MBS) (items 173, 193, 195, 197 and 199)
- In the 2009/2010 total of 537,785 acupuncture services reimbursed Medicare cost of \$21,143,968. Of these 49 out of more than 500,000 related to services delivered within hospitals at a cost of \$1,821. (Australian Government Medicare statistics)
- In Australia, acupuncture is rarely used in hospital settings

# Acupuncture in EDs

A US study investigated the ‘Efficacy and feasibility of acupuncture for patients in the ED with acute, non-penetrating musculoskeletal injury of the extremities (n=20 patients)

- Median change in VAS score from pre-acupuncture to time immediately after acupuncture (n = 16) was 16 mm, with a range of 0 to 60 mm (P < .0001). From pre-acupuncture to time 1 hour after acupuncture (n = 8), median change was 19 mm
- no significant difference in ‘Time in Department’ between those who received acupuncture and those who did not (P = .07)’
- Comments: acupuncture may be an efficacious, safe, and feasible analgesic alternative for patients presenting to the ED with minor acute injury to the extremities.

*(Arnold 2009, Efficacy and feasibility of acupuncture for patients in the ED with acute, nonpenetrating musculoskeletal injury of the extremities, AJEM)*



# Acupuncture in EDs

- 87 patients presented with acute pain to a ED in Maryland, US
- Participants in the acupuncture group experienced a 23% reduction in pain before leaving the ED, while average pain levels in participants in the standard medical care group remained basically unchanged. ( $p < 0.0005$ )

(Goertz, et al. Military Medicine 2006)

# RMIT- The Northern Hospital Acupuncture Program

The Northern Hospital -- The busiest Emergency Department (ED) in the State of Victoria (>70,000 patients/year, admission rate = 20%)

Acupuncture program introduced on 28 June 05

Provided by senior Chinese Medicine students, under direct supervision of registered Chinese medicine practitioners

Operated 2 afternoons (5 hours per day) per week



## **Phase I (Pilot phase 1: Jun 05 – Sep 05 )**

- 95 patients treated (46 received analgesia prior to acupuncture treatment, 49 did not), the team review the progress

## **Phase II (Pilot phase 2: Oct 2005 – May 2007)**

- 787 patients approached, 524 agreed to receive acupuncture treatment (66.6%), 458 completed treatment (87.4% of those agreed or 58.2% of all approached)

## **Comments**

- Acupuncture in ED appeared feasible and patients' interest was substantial
- The Australian Health Workforce Report 2006: the number of complementary medicine health workers increased substantially from 2001 to 2006: qualified acupuncturists are highly sought
- Phase I and II pilot data used in grant applications

# Acupuncture Practice in Australian Hospitals

## East to meet West in emergency ward

By Carol Nader  
March 4, 2005

A Melbourne hospital is challenging the traditional approach to medicine by treating patients with acupuncture in its emergency department.

The Northern Hospital will later this month be the first to offer the traditional Chinese treatment - one firmly resisted by some doctors.

The hospital has Victoria's busiest emergency department - it treated almost 15,800 patients in the September quarter last year, many of whom did not need emergency care.

The decision to offer acupuncture follows a three-month trial about a year ago, which found acupuncture was useful in treating pain quickly. It will be used to treat patients where appropriate and who consent, as long as their condition is not critical.



Michelle Mok practises acupuncture on a patient. She may be using the treatment at Northern Hospital soon.  
Photo: Rebecca Hallas

## Medicine gets a feel for Orient



October 2, 2011



During the year, staff-members in the Emergency Department took part in a Caption study to improve effective antibiotic prescribing for community-acquired pneumonia. This study was largely organised by Dr Carmel Crock.  
A research project into the use of **acupuncture** in the treatment of low back pain is being conducted

July 15, 2009

## Emergency departments in RMIT acupuncture trial

RMIT University researchers will investigate the use of acupuncture for pain management in emergency departments after receiving more than \$400,000 from the National Health and Medical Research Council for a three-year clinical trial.

About 500 patients will be involved in the trial at three Melbourne hospitals, with acupuncture used to alleviate pain from acute migraines, back ache and ankle injuries.

The research follows the promising results of pilot studies by RMIT researchers, in which more than 1,000 patients received acupuncture treatment for acute pain relief at the emergency department of the Northern Hospital.

Chief investigators Professor Marc Cohen and Professor Charlie Xue will lead the NHMRC-funded project, which will involve three randomised controlled trials comparing the efficacy of acupuncture, pain-killing drugs and acupuncture combined with drugs.

"There is ongoing evidence that pain management in emergency departments is inadequate, despite the fact that pain is the most common reason for why people come to emergency," Professor Cohen, the Professor of Complementary Medicine at RMIT, said.

"Acupuncture is known for its pain-relieving benefits and the preliminary research that RMIT has done shows it may be a valuable tool for practitioners in emergency settings."

Patients in the emergency departments of the Epworth, Alfred and Northern hospitals will be involved in the trial, with their pain levels monitored every hour until they leave hospital and for several days after their treatment.

AFTER more than 2500 years, traditional Chinese medicines and therapies are finding a place in the once-sceptical world of Western emergency departments and medical laboratories.

The Chinese Medicine department at RMIT's School of Health Sciences, the largest provider of Chinese medicine studies in Australia, is collaborating with a range of Victorian hospitals to trial the use and benefits of ancient remedies such as acupuncture and ginseng.

Acupuncture has been trialed on patients suffering acute pain in emergency rooms at the Alfred, Northern, Epworth and Cabrini Hospitals, while ginseng - a root believed to increase stamina and quality of life since the 11th century - is being tested to relieve symptoms of chronic lung disease at Box Hill Hospital and Austin Health.



Needles are inserted gently and painlessly to achieve drug-free pain relief.

## Drug-free pain relief at the end of a needle

Modern science and ancient techniques are combining to enhance drug-free pain relief in post-operative and road trauma patients at St John of God Nepean Rehabilitation Hospital.

Five of Nepean's physiotherapists have undertaken a course in Dry Needling developed by Senior Clinician Physiotherapist Jorgen Forsberg.

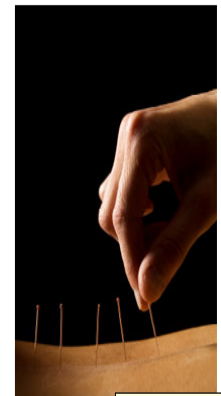
Patients are reporting positive results from the technique, which involves using needles

Today, in many countries both medical doctors and physiotherapists are using Dry Needling effectively and extensively for relieving pain and dysfunction.

Jorgen, initially trained in England, has amalgamated techniques learned from other clinicians. The treatment works best for mild to moderate pain and patients normally feel a difference in one to three treatments. A pleasant side effect is increased relaxation and often improved sleep.

One of Jorgen's patients, Jean, said the treatment eased her neck and shoulder pain almost immediately and after eight sessions her pain ratio had reduced from eight out of ten to three out of ten. She has recently returned to nearly full-time work after taking leave for a major shoulder operation in November 2004.

Another patient, Shaun, said of needling: "Every time I have it (needling), the pain relief lasts longer. It also helps me relax. It's really been a great help."



Acupuncture will be used in three Melbourne hospitals at emergency departments at three Melbourne hospitals. Image © istockphoto.

# Phase III: Feasibility Study

(Funded by the Department of Health,

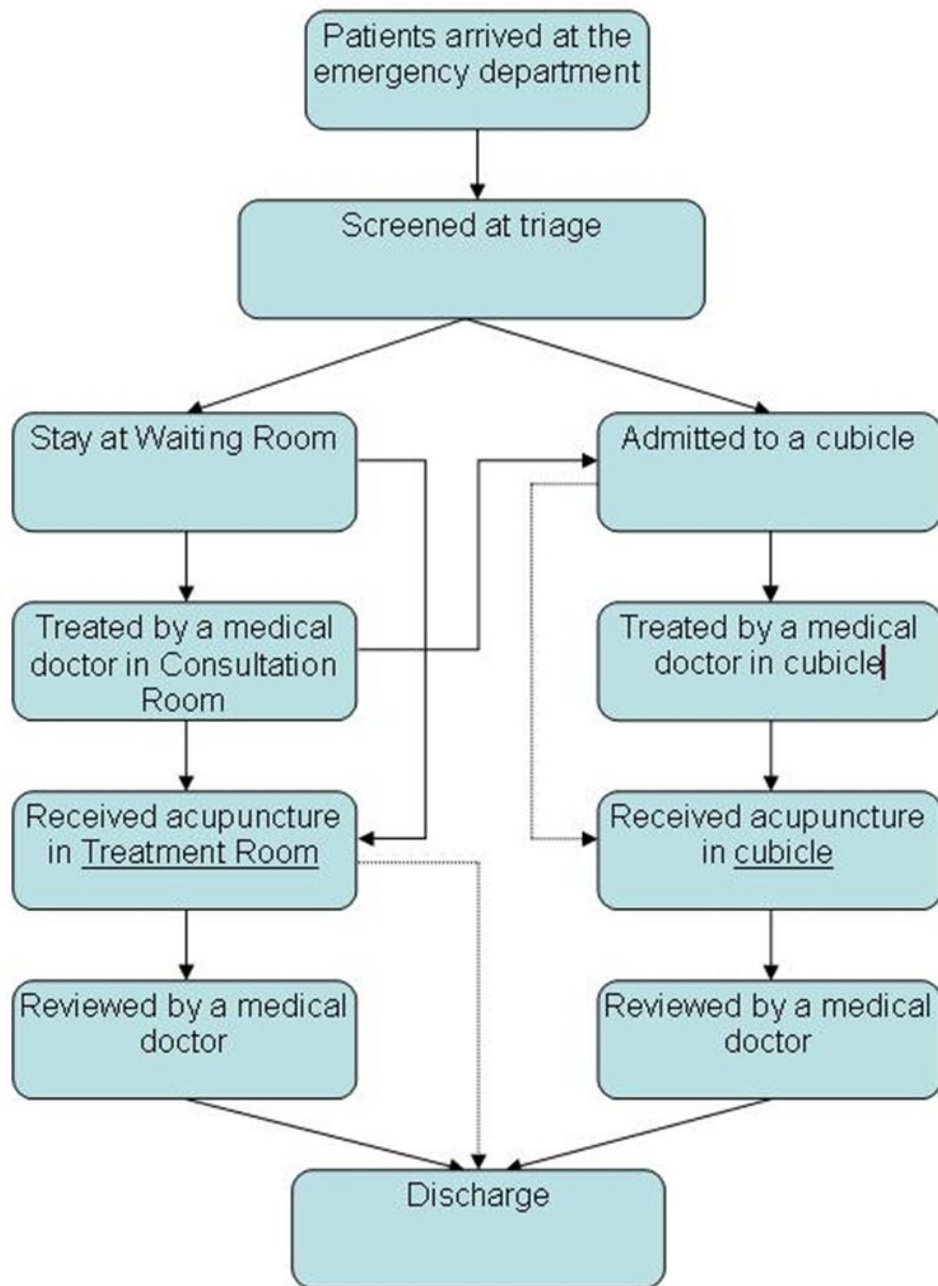
Victorian Government, study period Jan-Aug 2010)

## Rationale

Anecdotally, the availability of acupuncture service as an adjunct to routine medical care improved the therapeutic outcomes for the patient who presented to ED with an acute pain conditions

### *Primary objectives:*

- Pain reduction after acupuncture treatment
- Evaluate safety of acupuncture
- Evaluate acupuncture impacts on staff time and patient flow at EDs



## Participant flow

# Results: Phase III

- 200 patients in acupuncture group with historical controls of 200 closely matched patients from ED electronic health records
- Refusal rate 31%, with “symptoms under control due to medical treatment before acupuncture” the most prevalent reason for refusal (n = 36);
- Approx. half (52.5%) of participants responded ‘definitely yes’ for their willingness to repeat acupuncture, 31.8% responded ‘probably yes’
- Over half (57%) reported a satisfaction score of 10 for acupuncture treatment.
- Musculoskeletal conditions were most common treated n=117 (58.5%) followed by abdominal or flank pain n = 49 (24.5%).

## Results 2: Phase III

- Adverse events were rare: 2% and mild
- Pain (VAS 0-10) and nausea (Marrow Index 1-6) scores reduced from a mean  $7.01 \pm 2.02$  before acupuncture to  $4.72 \pm 2.62$  after acupuncture and from  $2.6 \pm 2.19$  to  $1.42 \pm 1.86$ , respectively.
- There was no significant difference in waiting time between acupuncture and control groups [mean=85.08 mins and 85.89 mins,  $t(398) = -0.112$ ,  $p = .91$ ].
- 55 patients received acupuncture before seeing a physician, waiting time was  $66 \pm 10$  minutes vs 145 patients use acupuncture after seeing a doctor:  $134 \pm 4.95$  minutes,  $p < 0.001$
- ED staff time managing patients: acupuncture before physician consultation:  $n=55$ :  $182 \pm 99$  minutes; acupuncture after physician consultation:  $273 \pm 152$  minutes

(Zhang AL et al. Acupunct Med 2014 March 8)



# Survey on ED medical staff

- A cross-sectional survey: Out of 60 surveys, 37 surveys (a response rate of 61.7%) complete.
- 32 questions on ED Staff's knowledge and understanding of acupuncture
- 87.8% of the staff considered that acupuncture should be an option of treatment provided by the hospital
- Over half (56.3%) participants agreed introduction of acupuncture in hospitals would reduce workload of ED staff
- 93.7% considered patients with low back pain may benefit from acupuncture
- Most (90.6%) of the staff considered that acupuncture is safe to receive in conjunction with conventional medicine.

## Phase IV RCT (Funded by NHMRC, 2009-2013)

- Multiple Emergency Department Acupuncture Controlled Trials (MEDACT)

- ❖ Alfred Hospital
- ❖ Northern Hospital
- ❖ Epworth Hospital
- ❖ Cabrini Hospital

Targeted sample size: 505

- 3 conditions: Acute ankle sprain, Acute Migraine, Acute Back Pain
- 3 groups: Acupuncture alone, Acupuncture plus Pharmacotherapy & Pharmacotherapy alone

### **Protocol**

Cohen M, Parker S, Taylor D, Smit de V, Ben-Meir M, Cameron P, Xue CC. Acupuncture as analgesia for low back pain, ankle sprain and migraine in emergency departments: study protocol for a randomized controlled trial. *Trials*. 2011 Nov 15;12:241.

# Hypotheses

- Acupuncture alone provides pain relief **comparable (equivalent)** to standard pharmacotherapy for these three conditions
- Acupuncture plus pharmacotherapy provides pain relief **comparable (equivalent)** to pharmacotherapy alone
- That acupuncture alone, or as an adjunct to pharmacotherapy, provides **clinically significant improvement** in functionality, is **safe and acceptable** to patients and **reduces** health resource utilisation

# Study participant flow

- 1: Patient identification, Screening (inclusion/exclusion) and Consent
- 2: Randomization
- 3: Baseline measurements
- 4: Treatment
- 5: Blinded assessor t1 (1hour post treatment) data measures and AE's (Adverse Events)
- 6: Blinded assessor t2, t3..... etc (hourly) data scores and AE's until discharge
- 7: Blinded assessor follow up phone call (48 hours +/-12 post discharge) data measures and AE's
- 8: End of study participation

# Preliminary Findings

- 539 patients recruited
- Trial completed
- Data being analysed

# Comments

- Acupuncture can be an effective and safe adjunct intervention for patients with acute pain in settings such as the emergency pain management environment
- Acupuncture as an add-on treatment does not increase length of stay
- integration of acupuncture in the hospital setting is generally welcomed by medical staff if the intervention is being provided by qualified acupuncturists.

# Acknowledgements

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RMIT University: Phases I and II and Staff Survey

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## **Project Team:**

Professor Charlie Xue, School of Health Sciences, RMIT University: Project Leader

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Dr Michael Ben-Meir, Clinical Director Cabrini Emergency Department

Dr Shefton Parker Dr Nelson Alingcastre, Dr William Lin: Acupuncture Clinicians, RMIT Uni

Dr Virginia Scarff and Dr Meredith McLaughlin: Survey Research

RMIT Chinese Medicine Students (deliver acupuncture treatments)

Mr Thomas Keech: Research Assistant for data collection and data entry

School of Mathematical and Geospatial Sciences, RMIT University (Data analysis)