# From Case to Evidence: A Secondary Analysis Approach to Acupuncture Reports

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## Background

The practice of compiling case reports remains strong in TCM[1]. Every day, a vast amount of complex data is generated in acupuncture practices worldwide. Signs and symptoms are gathered, which, filtered through clinical reasoning, result in diagnoses with attendant treatment principles, leading to treatments with outcomes. It is a simple explanation of workflow, but actual practice involves interdependent heterogeneous factors and effects that can be difficult to parse into statistically significant conclusions.

**Use of rigorous standard such as the CARE or the CARE-CHM[2] guidelines greatly aid clarity and comparability of case reports.** Data recording via a clinical registry and patient outcomes systems has similar utility.

## Benefits and biases

In addition to the benefits inherent in single case reports, analyses of multiple case reports and clinical registry data may enhance predictive models for acupuncture effectiveness for particular conditions, structuring data for in-depth analysis, and providing insights into practitioner clinical reasoning, patient experience, and treatment outcomes.

**These analyses can support whole-person health services research and evidence synthesis to inform clinical decision-making and clinical trial design.**

While case reports and clinical registry studies can provide valuable insights, particularly in the absence of higher levels of evidence, they may be limited by problems of generalizability, reporting and publication bias, attrition bias, and data quality. These problems are addressed to a large degree in the inclusion/exclusion criteria and methods for the analyses.

## Proposed timeline

**Consultation with colleagues at the joint SAR/RCMI PolyU International Research Conference in Hong Kong**, will inform the analyses to take place over the following eight months, with findings to be presented in 2025.

## Methods

To provide methodologically sound models of practice-based evidence collection and analysis, a team of researchers has designed qualitative and quantitative measures to apply to a dataset of approximately 130 cases from a clinical registry[3] and case report database[4] on a common topic: pain. **We use a mixed-methods analytic approach** to retain the richness of the case report format while allowing for important quantitative comparisons.

**Inclusion Criteria:**

Toward the aim of naturalistic observation, inclusion/exclusion criteria were established by multi-phased consultation with all researchers.

- De-identified patient information; primary health complaint with a patient-endorsed pain score of at least 1/10 or higher according to NPRS, PROMIS, VAS; at least five signs and symptoms relevant to TCM clinical diagnostic reasoning within the four broad categories of **observation** (tongue, color, sound, smell, etc.), **palpation** (pulse, channel, etc.), **pattern diagnosis,** and **treatment;** acupuncture treatment.

**Data Categorization and Coding:**

- Health complaints: These will be standardized using ICPC-2 coding to ensure consistency across the dataset.
- Diagnosis will be categorized according to the ICD-11 TM codes.
- Adverse events: Adverse events specific to acupuncture will be manually coded using a quantitative scale developed for this purpose.
- The research team will undertake extensive data cleaning to code textual data into relevant thematic categories.[5]

**Quantitative Analytical Methods:**

- Descriptive statistics: Patient demographics (age, gender, BMI, health complaint category and duration) and treatment data (frequency, diagnosis and modalities) will be analyzed using descriptive statistics and frequency distributions.
- Correlation: Spearman's r will be used to assess the correlation between NPRS, PROMIS and PGIC scores.
- Patient Outcomes: Pairwise T-tests will be used to compare pain scores at each follow-up timeline to baseline after calculating Standard Deviation (SD). Patient Global Impression of Change (PGIC) scores will be calculated using frequency distributions. Sensitivity and subgroup analysis will reveal differences according to treatment variables.

## Methods *(cont.)*

The quantitative methods will collectively enable a comprehensive quantitative evaluation of the data, aiding in the identification of significant patterns and outcomes in the study.

**Qualitative Analytic Methods:**

The qualitative thematic analysis will focus on two questions that take advantage of the rich time series information of case reports and descriptive fields in the EHR: (1) changes in diagnostic reasoning and (2) changes in patients' reported self-care behaviors. **Using the sample of 20 selected cases, 10 entered case reports, and 10 patient records chosen through ACU-Track, we will conduct a thematic analysis and purposive coding of specific qualitative fields (diagnostic reasoning and patient self-care behavior).**

While we are interested in emergent themes, we are also looking for evidence of complexity in the TCM model with a focus on practitioners' diagnostic reasoning and patient presentation, such as: attractors, cusp catastrophe, perturbation, consistent patterns across scale, non-linear changes such as symptoms that resolve and then return after an intervention or multi-component treatment.

**Specific apriori questions include:** Are we more likely to see a change in diagnostic reasoning if a patient does not get better? If yes, what are the qualities of such changes? Can we see patients taking up behavioral advice offered by the clinician? **Qualitative results will be framed using quantitative clinical and diagnostic fields.**

Above is an example of a word cloud, a common visual qualitative measure showing frequency by size of font. **This cloud was generated from analysis of the ten treatment sections of the case report data set.**

## Acknowledgements

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## References