# Principles in Designing Traditional Medicine Education Programs

*Abstract: The usage of traditional medicine (TRM) is on the increase in the western pacific region. TRM services are provided by both TRM practitioners and medical doctors. However, consistent standards of training in TRM for practitioners in either TRM or medical personnel are yet to be determined. There are many models for the development of educational programs in TRM, such as a pure TRM model and an integrative medicine model. The general principles for program design in medical education are applicable to the development of programs in TRM, in addition, there are eight specific principles that need to be borne in mind when programs in TRM are being planned and developed in order to maintain the integrity of TRM theory while ensuring public safety. (Pacific Health Dialog 2003, Vol.10 (2); Pg 99-105)*

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## Introduction

The usage of traditional medicine (TRM) has been increasing in the western pacific region and services of TRM are provided by both TRM practitioners and medical doctors. Certain techniques such as acupuncture and herbal medicine have been widely used by many doctors throughout the region in daily practice. However, consistent standards of training in TRM for practitioners in either TRM or medical personnel are yet to be determined. This is largely due to the complexity of TRM, that is, there are many forms of TRM and numerous theoretical frameworks developed from different social and cultural contexts.

With the trend of globalization, many forms of TRM such as Chinese herbal medicine and acupuncture have been practiced throughout the world in which the assumed knowledge and skills of the consumers and practitioners do not exist. Thus, for the sake of maximizing the therapeutic potential and ensuring public safety, a number of principles needed to be considered when a training program in TRM is being developed. These principles, such as understanding the social and cultural context of each form of TRM and incorporating its fundamental concepts into diagnostic procedures as well as treatment plans, need to be adapted. At the same time, it is critical to embed understanding of basic and clinical western medical sciences into the training program to ensure that graduates are conversant in these areas so that timely diagnosis, appropriate treatment and effective communication with other health professionals can be ensured.[1]

In order to ensure appropriate use of TRM, a critical review of classical literature is needed in order to gather relevant and useful information for the planning of more rigorous scientific research, such as clinical trials and safety evaluation. Thus, the concept of evidence-based medicine and harmonization / integration should be adapted. [2]

It is important to note that this approach might not be feasible in certain countries / regions due to the limited human, physical resources and expertise available. This paper will discuss the following issues:

1. What is TRM?
2. What role does it play?
3. What are the capabilities required for TRM practitioners?
4. What are principles when design traditional medicine education programs?
5. Conclusions

## What is TRM?

TRM is an ancient medical practice that provided primary health care to the public prior to the development and application of modern medicine. [3] There are many forms of TRM which were developed and practiced under their unique philosophical underpinnings and cultural characteristics. These forms of TRM have been in practice since the beginning of human civilization. Their history and treatment approaches vary. Thus, it has been a great challenge to provide a concise definition of TRM.

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At the WHO *Regional Workshop on Development National Policy on TRM* held in October 1999 in Beijing3, a consensus was reached to define TRM as "the sum total of knowledge, skills and practices on holistic healthcare, which is recognized and accepted by the community for its role in the maintenance of health and the treatment of diseases. TRM is based on the theory, beliefs and experiences that are indigenous to different cultures, and that is developed and handed down from generation to generation".

This definition captures the key aspects of TRM which include:

TRM is a holistic healthcare system under its unique theory and skills;
- TRM is recognized and accepted as methods of health maintenance and disease treatment;
TRM is culturally specific; and
- TRM continues to develop and exist through clinical practice.

These four aspects are worth exploring, as they are distinctively different from modern medicine.

Firstly, holism is a common feature of various forms of TRM.[3,5] This concept has existed in some forms of TRM such as traditional Chinese medicine[3,5] since its inception several thousands years ago. Holism emphasizes the interconnectedness amongst the various systems within the human body as well as the close connection between human and environment. In TRM, the concept of holism penetrates through the understanding of all aspects of theory and practice, including understanding human physiology, etiology, pathology, clinical diagnosis, treatment and prognosis. With this in mind, holism makes TRM unique when compared to modern medicine of which the focus is on a molecular level.

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Secondly, recognition and acceptance of individual forms of TRM by relevant communities are specific to their cultural familiarity.[3] However, when these forms of TRM are practiced outside their own communities and cultural contexts, a number of issues will need to be addressed. That is, the absence of assumed knowledge and skills might become critical factors of safety and clinical efficacy of TRM. For example, the clinical application of a Chinese herbal medicine, *Fuzi* (aconite), it is required to be decocted for more than 2 hours prior to other herbs are added for the purpose of reducing its cardiac toxicity. However, if this is not done, it may result in serious adverse events such as cardiac arrest. On the other hand, if all the herbs were decocted for more than two hours, some active ingredients of the herb would be destroyed due to high temperatures and long duration of processing and resulting in ineffectiveness. Thus, how translating this assumed understanding into clinical practice in a wider community is critical in ensuring safe and effective use of TRM.

Thirdly, the issue of cultural specificity has a significant impact on its effectiveness and safety. That is, as part of the cultural heritage, TRM tends to be accepted and believed to be effective by its community members, which may become key factors that contribute to the efficacy of many conditions. However, when they are practiced in communities with different cultural backgrounds, the results might be different or significantly lower than those of its original community.

Finally, continuation of development and presence through clinical practice may not require more scientific proof within its community, however, when it is adopted in a global market, it needs to meet contemporary expectations, that evidence is gathered under the same parameters as those in western medicine.

In short, the current definition of TRM outlines the unique features of TRM and at the same time, it also highlights the shortcomings of TRM. In addition, when TRM is practiced concurrently with western medicine, these shortcomings became more apparent.3.6.7

However, this does not mean that the role of TRM is diminishing, in contrast, the popularity of TRM has increased rapidly over the last several decades despite many breakthroughs and advances have been made in modern medicine. The fact that over 40% of American and over 50% of Australian use TRM demonstrates that there are shortcomings of modern medicine and it is clear that there are many aspects of health care that need other approaches such as TRM to meet these needs.

Therefore, evidence-based healthcare in modern medicine and TRM is the key to success in healthcare in the 21 st century. With this connection, the following sections will explore how education programs should be developed and delivered to ensure that such a practice, that is, TRM and western medicine co-existing in harmony, thus, providing an evidence-based health practice to patients that optimize the benefits and at the same time minimize the risks.2

## What role does TRM play?

TRM practitioners play different roles in different countries and regions. In some countries and regions such as Mainland China, Vietnam and Korea, TRM is practiced side by side with western medicine in both community clinics and hospitals. In other countries and regions such as Hong Kong, Australia and USA, TRM is practiced largely in private clinics with little or no interaction with other health care professionals. Nevertheless, patients tend to seek various forms of health care concurrently, which raises issues of safe and effective use of TRM and western medicine.

Therefore, it is critical that besides their own theory and practice, TRM practitioners are expected to have adequate knowledge in western medical sciences and clinical skills.

## What capabilities are required to ensure safe and effective practice of TRM?

As TRM is being practiced in a multidisciplinary healthcare system, TRM practitioners are expected to have the following capabilities include':

- technical capabilities,
- communication capabilities,
  responsible and sustainable practice, and
  research and information management.

These four broad categories of capabilities are supported by detailed skills, abilities that need to be developed based on enabling knowledge that underpins the skills and abilities. Following (Tables 1 to 4)[1] is an example of capabilities of a Chinese herbal medicine program developed by RMIT in 2003.

**Table 1: Technical Capabilities**

| Dimension of capability: Technical Capability | Underpinning abilities and skills | Enabling knowledge |
|---|---|---|
| Ability to understand the principles of Chinese medicine and its diagnosis and treatment fordiseases<br><br>Ability to formulate a herbal prescription based on an understanding of the components, indications and contraindications, individual patients' conditions, and to prepare and dispense a Chinese herbal prescription<br><br>Ability to diagnose and differentiate diseases/ disorders according to both western and Chinese medicine principles and techniques<br><br>Ability to formulate a treatment plan including time-lines, and review and monitor the health of the patient | Skill in taking a case history according to both Chinese medicine and western medicine principles<br><br>Skill in performing the diagnostic techniques<br><br>Skills in interpreting Chinese herbal prescriptions<br><br>Skills in synthesizing information from Chinese diagnostic and western diagnostic assessments<br><br>Clinical decision making skills with respect to determining when to treat and when to refer<br><br>Skills of First aid.<br><br>Skills to identify Chinese herbs accurately and differentiate them from similar herbs<br><br>Skill in preparing and processing of herbs | Understanding of evidence-based medical paradigm and its applicability to Chinese medicine<br><br>Knowledge of philosophies, principles of Chinese medicine including theoretical framework, etiology, pathogenesis, including knowledge of 'Classic Literature' of Chinese medicine.<br><br>Knowledge of actions of Chinese herbs and western medications in terms of Chinese medicine and western medical science<br><br>Knowledge of chemistry and of plant science of Chinese herbs, and knowledge of methods and standards for identifying, processing Chinese herbs<br><br>Understanding of the multi-dimensional nature of wellness and illness (physical, emotional, social and spiritual) and the factors affecting the patient including familial, social and physical environments and their impact in terms of their illness and healing<br><br>Knowledge of common diseases of internal medicine, dermatology, pediatrics, gynecology, traumatology and ENT/ophthalmology including etiology, pathology, differential diagnoses (syndromes), treatment principles and representative formulae for treatment of disease according to different Chinese medicine theories, as well as knowledge of their standard western diagnosis and treatments.<br><br>Knowledge of the limitations of Chinese herbal medicine. |

**Table 2: Communication Capabilities**

| Dimension of capability: Communication | Underpinning abilities and skills | Enabling knowledge |
|---|---|---|
| Ability to communicate effectively with patients, other health professionals, regulatory bodies, herbal suppliers and the general public | Skills in communicating with patients, practitioners, regulatory bodies, and herbal suppliers<br><br>Skills in interpreting and critique written and verbal works<br><br>Ability to discuss disease and treatment in terms of Chinese medicine understanding and western medicine with other health professionals including dispensers, GPs<br><br>Presentation skills for different audiences (contexts) | Knowledge in professional and ethical behavior that respects the patient and the rights of the patient<br><br>Understanding of communication in a cross-cultural context<br><br>Understanding of the factors affecting communications<br><br>Knowledge of formats for written and verbal communication in clinical/ professional / academic contexts e.g, Chinese Medicine Registration Board |

**Table 3: Responsible and Sustainable Practice Capabilities**

| Dimension of ca pability: Responsible and Sustainable Practice | Underpinning abilities and skills | Enabling knowledge |
|---|---|---|
| Ability to practise within regulatory/ ethical/ safety frameworks<br>Ability to identify key business issues and draw on appropriate professional resources<br><br>Ability to continue to learn | Skills in implementing appropriate record keeping, financial management, and identifying source relevant business support/advice<br><br>Risk management skills with respect to safety of premises, practice, patient and self/other employees<br><br>Skills in reporting adverse events according to formal reporting systems | Knowledge of regulatory and legal frameworks (including regulatory Acts), particularly those related to patient privacy, and possession, use anc dispensing of therapeutic goods.<br><br>Understanding of the responsibility of providing appropriate information and advice and the responsibility to facilitate referral if necessary, and protocol for referring to medical practitioners in the event of an adverse event<br><br>Knowledge of workplace/ occupational health and safety requirements, regulations and practices<br><br>Knowledge of key components of small business including ethical and legal responsibilities |

**Table 4: Research and Information Management Capabilities**

| Dimension of capability: Research and Information Management | Underpinning abilities and skills | Enabling knowledge |
|---|---|---|
| Ability to remain informed about advances in knowledge and apply it in clinical practice where appropriate<br>Ability to critically review research publications relevant to Chinese medicine<br><br>Ability to plan the steps involved in research into Chinese herbal medicine within an ethical framework, and to conduct a research project | Skills in literature research and critical review<br><br>Skills in interpreting bio-statistics and research methodology<br><br>Skills in conduct quality clinical trials in evaluation of safety, quality, and efficacy of Chinese herbal medicines<br><br>Skills to human and animal ethics approval procedures for research projects<br><br>Skills for publication (including public government, peer reviewed journals, etc) | Knowledge of key resources of information on Chinese medicine, western medicine and evidence-based medicine Understanding difference in research methodologies, including biostatistics.<br><br>Knowledge of ethical issues and frameworks for research, including the ethical requirements for using animals, the rights of patients participating in clinical trials and responsibilities of researchers to patients.<br><br>Understanding issues such as potential conflicts of interest or pecuniary interests with respect to research<br><br>Knowledge of requirements of research funding sources and grant application |

## Principles in designing traditional medicine education programs

There are many models can be adopted for the development of educational programs in TRM, such as a pure TRM model and an integrated model. However, the decision of which model should be adopted should be made on the basis of the needs of the community and the role it plays in the healthcare system. In some countries, such as China and Vietnam, there may be a number of models co-existing due to the needs of various communities. For example, in Vietnam, urban areas have better access to western medicine and have better facilities for an integrative model of TRM education, however, in the majority of rural areas, the primary form of health care is still a pure TRM model.

The general principles for program design in medical education([8]) are applicable to the development of programs in TRM, however, there are specific principles that need to be borne in mind when programs in TRM are being planned and developed.

*TRM is not in isolation*

There are many forms of health care that are practiced and used concurrently. Practitioners in TRM and western medicine need to be familiar with other forms of healthcare. In addition, they are expected to communicate in one common language, most likely modern western medicine. This is because western medicine provides more precise and accurate understanding in etiological factors, pathology, diagnosis and prognosis. Thus, TRM practitioners are required to have sufficient knowledge, skills and appropriate attitudes towards modern medicine in order to provide timely diagnosis and appropriate treatment to avoid any unnecessary delay of patient care. However, the issue is how much western medicine is enough and would it dilute the understanding and practice of TRM.

***Unique characteristics and integrity of TRM theoretical framework should be preserved***

The fact that TRM continues to exist and play a meaningful role in the healthcare system indicates the value of its existence. Therefore, it is critical that the strength and potential effectiveness perceived and experienced by the public be maintained. This will be achieved by ensuring TRM practice is guided by its unique theoretical underpinning. There is a trend that certain techniques or medicinal substances are removed from their own theory and adapted into another medical system without a clear understanding on its efficacy from a western medical perspective. For example, acupuncture is one of the most commonly used form of TRM, its practice is guided by its theory including meridian, acupuncture points and needling methods as part of traditional Chinese medicine theory. Within Chinese medicine itself, it explains the selection and usage of acupuncture points and needling methods. However, when it is practiced by non-Chinese medicine trained practitioners, the concept that guides its practice was abandoned. Thus, the potential therapeutic effects may be compromised due to the fact that the mechanism in western medicine of acupuncture is yet to be elucidated. The situation of herbal medicine might be slightly different, for example, ephedrine has been purified from Ma Huang, its chemical structure has been clearly identified and thus the mechanisms of its action are well understood. Therefore, it can be effectively used without specific training in Chinese medicine.

***The balance between western and TRM should be carefully considered***

This should be determined by whether TRM practitioners are responsible for making clinical decisions in both western and Chinese medicine treatments (such as those in China) or referring patients to other health care practitioners such as medical doctors. For the former, the level of training in western medicine would be at a higher level including basic science, clinical diagnosis, differential diagnosis and pharmacology as well as western medical treatment. In contrast, for the latter model, the needs of western medicine for TRM practitioner required would be less as no treatment would be prescribed and monitored.

**TRM is clinically orientated and thus, it is practical, applicable, holistic and individualized to patients. However, there is a lack of detailed description of the theory, a lack of detailed process of clinical diagnosis that clearly identify the location, etiology and pathology,**

***Complementarities between Western and TRM should be encouraged***

TRM is clinically orientated and thus, it is practical, applicable, holistic and individualized to patients. However, there is a lack of detailed description of the theory, a lack of detailed process of clinical diagnosis that clearly identify the location, etiology and pathology, and lack of understanding of mechanisms of actions.

Thus, the teaching of the two systems should be in parallel so that students can appreciate the complementarities between western medicine and TRM.

*Clinical training should be adequate*

TRM tends to have abstract concepts and lack of detailed theoretical interpretation. However, understanding of these concepts heavily relies on clinical observation and practicum. Thus, TRM education should emphasize the importance of clinical education. In addition, due to the lack of detailed description of diagnosis, treatments tend to focus on common clinical signs and symptoms instead of diseases entities. The overlap of general clinical approach makes evaluation of an intervention difficult. This complex framework requires a more prolonged process in clinical education to allow students to learn both western and TRM systems concurrently.

***Critical thinking and research skills should be embedded***

Most of the key concepts of TRM were summed up by long-term clinical observation and are significantly different from those of western medicine. Although they are fundamental concepts to guide the practice of TRM, the value of these concepts needS further validation. Therefore, critical thinking and research skills are crucial to foster a more scientific approach and more evidence-based TRM practice. From a clinic point of view, it is critical that the development of TRM embraces the concepts of EBM. Under EBM, understanding of exact mechanisms of actions are not required other than whether the intervention is effective and safe based on reliable outcome measurements and interpretations.

**Although TRM does not have high level of scientific evidence of efficacy and safety as well as understanding of the mechanisms of action, it is critical to learn its past as most of the literature was based on human observation.**

***Teaching and learning of TRM should adapt recent advances of teaching technologies and innovative curriculum design to enhance learning outcomes and learning efficiency***

Due to the long history of TRM, teaching methods tend to base on one to one clinical tuition or face-to-face interaction. In addition, the duration of education is seen as the critical factor of assessing program quality. There is little emphasis on adaptation of teaching technology and innovative curriculum design as well as quality management. In contrast with the overall trend in western medicine education, that is the length of courses are being shortened, postgraduate entry becoming more popular, learning outcomes are more specific and quality management is more stringent, the majority of TRM education institutions still use length of course as the major indicator of program quality and graduate capabilities.

***Learning from the past forms the basis of future success***

Although TRM does not have high level of scientific evidence of efficacy and safety as well as understanding of the mechanisms of action, it is critical to learn its past as most of the literature was based on human observation. This is distinctively different from western medicine where initial observation is based on animal studies. When it is being translated into human trials, it takes extra steps to ensure that data obtained from animal experiments are applicable to human subjects. In addition, critical review of classical literature may also help to identify priority areas of TRM research to ensure that limited resources are allocated for the most appropriate areas of research.

## Conclusions

Due to the changes to the healthcare system and expectations of TRM practitioners, educational programs in TRM need to address these contemporary, issues to ensure public safety and better understanding on quality and efficacy of TRM techniques and herbal medicines. This will be achieve through a stepwise and progressive manner due to the roles of TRM are significantly different in various countries and regions. Based on the capabilities required for safe and effective TRM practice in a multidisciplinary health care setting, an integrative model with emphasis on EBM is recommended for TRM program design for the western world such as Australia.

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Nature, in medical language, as opposed to Art, means trust in the reactions of the living system against ordinary normal impressions.
Art, in the same language, as opposed to Nature, means an intertional resort to extraordinary abnormal impressions for the relief of disease
Oliver Wendell Holmes (1809-1894)