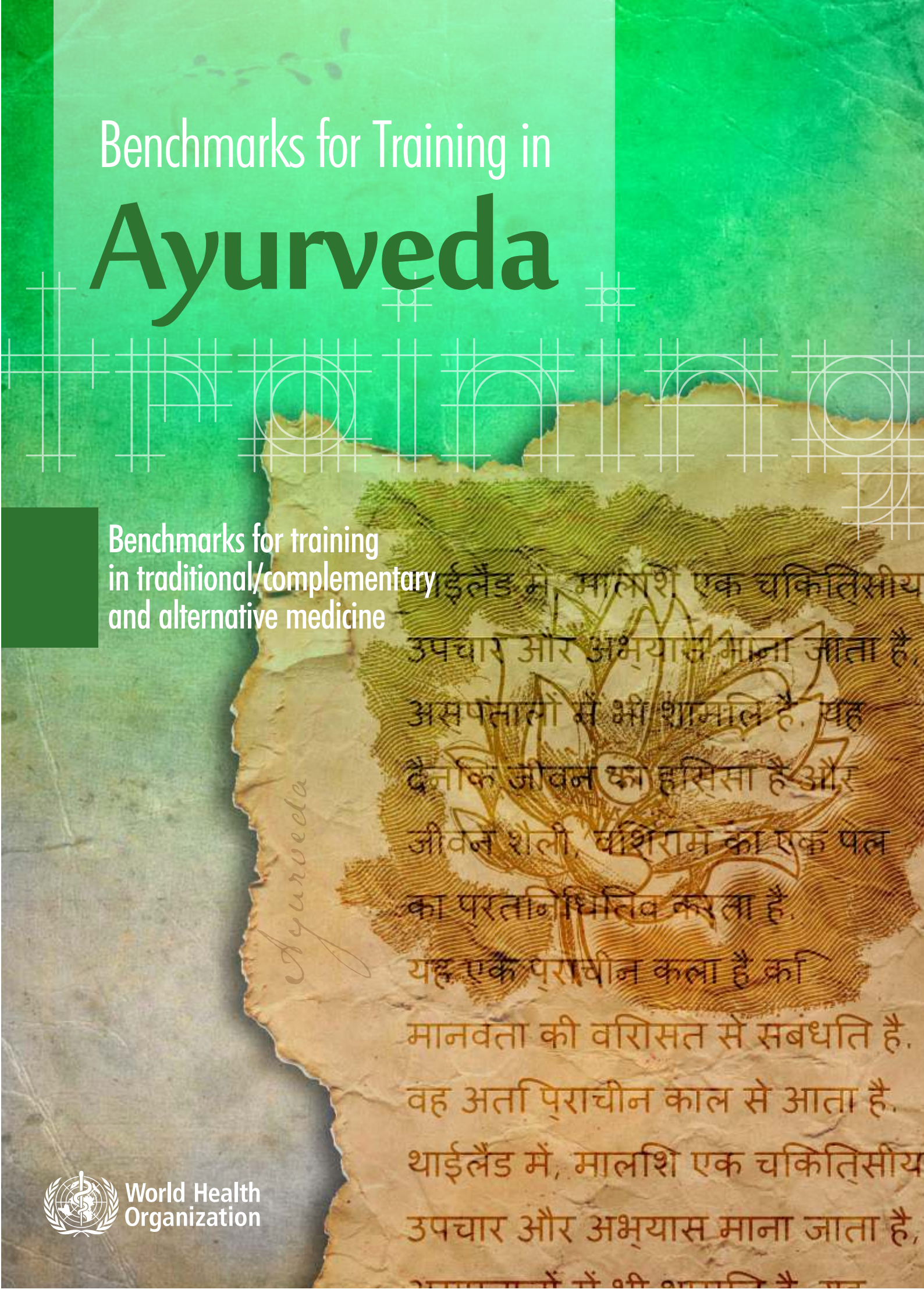
Benchmarks for Training in Ayurveda

Benchmarks for training in traditional/complementary and alternative medicine



World Health Organization

Benchmarks for training in traditional / complementary and alternative medicine

Benchmarks for Training in Ayurveda

WHO Library Cataloguing-in-Publication Data

Benchmarks for training in traditional /complementary and alternative medicine: benchmarks for training in Ayurveda.

1.Medicine, Traditional. 2.Medicine, Ayurvedic. 3.Complementary therapies. 4.Benchmarking. 5.Education. I.World Health Organization.

ISBN 978 92 4 159962 7 (NLM classification: WB 55.A9)

Printed in Switzerland.

Contents

Acknowledgements

The World Health Organization (WHO) greatly appreciates the financial and technical support provided by the Regional Government of Lombardy, Italy, for the development and publication of the basic training documents, as part of the implementation of collaborative projects with WHO in the field of traditional medicine. The Regional Government of Lombardy kindly hosted and provided financial support for the WHO Consultation on Phytotherapy, held in Milan, Italy in November 2006.

WHO also wishes to express its sincere gratitude to the Government of India for supporting the preparation of these benchmarks for training in Ayurveda. A special acknowledgement of appreciation for work in preparing the original text of this document is extended to Professor Vinod Kumar Joshi, Faculty of Ayurveda, Banaras Hindu University, Varanasi, India.

WHO acknowledges its indebtedness to 274 reviewers, including experts and national authorities as well as professional and nongovernmental organizations, in 114 countries who provided comments and advice on the draft text.

Special thanks are due to the participants of the WHO Consultation on Phytotherapy (see Annex 2) who worked towards reviewing and finalizing the draft text, and to the WHO Collaborating Centre for Traditional Medicine at the State University of Milan, Italy, in particular to Professor Umberto Solimene, Director, and Professor Emilio Minelli, Deputy Director, for their support to WHO in organizing the Consultation.

Foreword

The oldest existing therapeutic systems used by humanity for health and well-being are called Traditional Medicine or Complementary and Alternative Medicine (TM/CAM).

Increasingly, TM/CAM is being formally used within existing health-care systems. When practised correctly, TM/CAM can help protect and improve citizens' health and well-being. The appropriate use of TM/CAM therapies and products, however, requires consideration of issues of safety, efficacy and quality. This is the basis of consumer protection and is no different, in principle, from what underpins modern medical practice. Upholding basic requirements for the modern practice of TM/CAM therapies can support national health authorities in the establishment of adequate laws, rules, and licensing practices.

These considerations have guided the work of the Regional Government of Lombardy in TM/CAM which was first included in the Regional Health Plan 2002-2004. Clinical and observational studies in the region of Lombardy have provided a crucial step in the evaluation of TM/CAM. With the help of data from these studies, a series of governmental provisions have been used to create a framework for the protection of consumers and providers. The cornerstone of this process was the first Memorandum of Understanding (MOU) for the Quadrennial Cooperation Plan which was signed between the Regional Government of Lombardy and the World Health Organization. The MOU highlighted the need for certain criteria to be met including: the rational use of TM/CAM by consumers; good practice; quality; safety; and the promotion of clinical and observational studies of TM/CAM. When they were published in 2004, the *WHO guidelines for developing consumer information on proper use of traditional, complementary, and alternative medicine* were incorporated into this first MOU.

In the region of Lombardy, citizens currently play an active role in their health-care choices. The awareness of the advantages as well as of the risks of every type of care is therefore critical, also when a citizen actively chooses to use TM/CAM. Consumers have begun to raise new questions related to the safe and effective treatment by all providers of TM/CAM. For this reason, the Regional Government of Lombardy closely follows WHO guidelines on qualified practice of TM/CAM in order to guarantee appropriate use through the creation of laws and regulations on skills, quality control, and safety and efficacy of products, and clear guidelines about practitioner qualifications. The Regional Government of Lombardy has also provided support and cooperated with WHO in developing this series of benchmark documents for selected popularly used TM/CAM therapies including Ayurveda, naturopathy, Nuad Thai, osteopathy, traditional Chinese medicine, Tuina, and Unani medicine.

Modern scientific practice requires a product or a therapeutic technique to be safe and effective, meaning that it has specific indications and evidence for care supported by appropriate research. Practitioners, policy-makers and planners,

both within and outside ministries of health, are responsible for adhering to this, in order to guarantee the safety and the efficacy of medicines and practices for their citizens. Furthermore, safety not only relates to products or practices per se, but also to how they are used by practitioners. Therefore it is important that policy-makers are increasingly able to standardize the training of practitioners for it is another fundamental aspect of protecting both the providers and the consumers.

Since 2002, the Social-Health Plan of the Lombardy Region has supported the principle of freedom of choice among different health-care options based on evidence and scientific data. By referring to the benchmarks in this present series of documents, it is possible to build a strong foundation of health-care options which will support citizens in exercising their right to make informed choices about different styles of care and selected practices and products.

The aim of this series of benchmark documents is to ensure that TM/CAM practices meet minimum levels of adequate knowledge, skills and awareness of indications and contraindications. These documents may also be used to facilitate establishing the regulation and registration of providers of TM/CAM.

Step by step we are establishing the building blocks that will ensure consumer safety in the use of TM/CAM. The Regional Government of Lombardy hopes that the current series will be a useful reference for health authorities worldwide, and that these documents will support countries to establish appropriate legal and regulatory frameworks for the practice of TM/CAM.

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Preface

There has been a dramatic surge in popularity of the various disciplines collectively known as traditional medicine (TM) over the past thirty years. For example, 75% of the population in Mali and 70% in Myanmar depend on TM and TM practitioners for primary care,[1] while use has also greatly increased in many developed countries where it is considered a part of complementary and alternative medicine (CAM). For instance, 70% of the population in Canada[2] and 80% in Germany[3] have used, in their lifetime, traditional medicine under the title complementary and alternative medicine.

Integration of traditional medicine into national health systems

Traditional medicine has strong historical and cultural roots. Particularly in developing countries, traditional healers or practitioners would often be well-known and respected in the local community. However, more recently, the increasing use of traditional medicines combined with increased international mobility means that the practice of traditional medicines therapies and treatments is, in many cases, no longer limited to the countries of origin. This can make it difficult to identify qualified practitioners of traditional medicine in some countries.

One of the four main objectives of the WHO traditional medicine strategy 2002-2005 was to support countries to integrate traditional medicine into their own health systems. In 2003, a WHO resolution (WHA56.31) on traditional medicine urged Member States, where appropriate, to formulate and implement national policies and regulations on traditional and complementary and alternative medicine to support their proper use. Further, Member States were urged to integrate TM/CAM into their national health-care systems, depending on their relevant national situations.

Later in 2003, the results of a global survey on policies for TM/CAM conducted by WHO showed that the implementation of the strategy is making headway. For example, the number of Member States reporting that they have a national policy on traditional medicine rose from five in 1990, to 39 in 2003, and to 48 in 2007. Member States with regulations on herbal medicines rose from 14 in 1986, to 80 in 2003, and to 110 in 2007. Member States with national research institutes of traditional medicine or herbal medicines rose from 12 in 1970, to 56 in 2003, and to 62 in 2007.[4]

[1] Presentation by the Governments of Mali and Myanmar at the Congress on Traditional Medicine, Beijing, People's Republic of China, 7-9 November 2008.

[2] Perspectives on Complementary and Alternative Health Care, a collection of papers prepared for Health Canada, Ottawa, Health Canada, 2001.

[3] Annette Tuffs Heidelberg. Three out of four Germans have used complementary or natural remedies, British Medical Journal 2002, 325:990 (2 November).

[4] WHO medicines strategy 2008-2013 and Report from a WHO global survey on national policy on traditional medicine and regulation of herbal medicines, 2005.

Ideally, countries would blend traditional and conventional ways of providing care in ways that make the most of the best features of each system and allow each to compensate for weaknesses in the other. Therefore, the 2009 WHO resolution (WHA62.13) on traditional medicine further urged Member States to consider, where appropriate, inclusion of traditional medicine in their national health systems. How this takes place would depend on national capacities, priorities, legislation and circumstances. It would have to consider evidence of safety, efficacy and quality.

Resolution WHA62.13 also urged Member States to consider, where appropriate, establishing systems for the qualification, accreditation or licensing of practitioners of traditional medicine. It urged Member States to assist practitioners in upgrading their knowledge and skills in collaboration with relevant providers of conventional care. The present series of benchmarks for basic training for selected types of TM/CAM care is part of the implementation of the WHO resolution. It concerns forms of TM/CAM that enjoy increasing popularity (Ayurveda, naturopathy, Nuad Thai, osteopathy, traditional Chinese medicine, Tuina, and Unani medicine).

These benchmarks reflect what the community of practitioners in each of these disciplines considers to be reasonable practice in training professionals to practice the respective discipline, considering consumer protection and patient safety as core to professional practice. They provide a reference point to which actual practice can be compared and evaluated. The series of seven documents is intended to:

- support countries to establish systems for the qualification, accreditation or licensing of practitioners of traditional medicine;
- assist practitioners in upgrading their knowledge and skills in collaboration with providers of conventional care;
- allow better communication between providers of conventional and traditional care as well as other health professionals, medical students and relevant researchers through appropriate training programmes;
- support integration of traditional medicine into the national health system.

The documents describe models of training for trainees with different backgrounds. They list contraindications identified by the community of practitioners, so as to promote safe practice and minimize the risk of accidents.

Drafting and Consultation Process

The most elaborated material to establish benchmarks comes from the countries where the various forms of traditional medicine under consideration originated. These countries have established formal education or national requirements for licensure or qualified practice. Any relevant benchmarks must refer to these national standards and requirements.

The first stage of drafting of this series of documents was delegated to the national authorities in the countries of origin of each of the respective forms of traditional, complementary or alternative medicine discussed. These drafts were then, in a second stage, distributed to more than 300 reviewers in more than 140 countries. These reviewers included experts and national health authorities, WHO collaborating centres for traditional medicine, and relevant international

and regional professional nongovernmental organizations. The documents were then revised based on the comments and suggestions received. Finally, WHO organized consultations for further final review, prior to editing.

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Introduction

Vedic medicine, considered one of the oldest systems of medicine in the world, was developed in India during the period 2000-1000 B.C. The seers of ancient India used their observation, experience and natural resources to develop a unique system which they named Ayurveda, or the "science of life".

The use of Ayurveda for treatment involves two different types of experts: practitioners and dispensers. Within the category of practitioners, there is a sub-category for Ayurveda therapists, of two types: those who practise as panchakarma therapists and those who practise as Ayurveda dieticians. As Ayurveda has its own unique theory and treatment, distributors should also be trained in order to ensure safety and quality of the materials of Ayurvedic medicines.

Box 1 - Milestones in the development of Ayurveda

- Ayurveda was derived from the *Vedas*, the compendium of ancient Indian knowledge. The *Atharvaveda*, or "fourth *Veda*" (1500-1000 BC) also mentions many medicinal plants and concepts from Ayurveda.
- The *Charaka Samhita* (1000 BC) and *Sushruta Samhita* (1000 BC) are the original texts of Ayurveda.
- The western system of medicine was introduced into India by the British in the 19th century. In 1827, classes in Ayurvedic medicine began at the Government Sanskrit College, Calcutta. A five-year degree course in Ayurvedic medicine and surgery was offered at Banaras Hindu University from 1927.
- In 1970, the *Ayurvedic formulary of India* (*1.2*) was published in two volumes by the Government of India. It contains over 600 compound Ayurvedic formulations.
- In 1999, Part I of the *Ayurvedic pharmacopoeia of India* (*3*) was published by the Government of India. To date, five volumes have been published.

The regular teaching of Ayurveda started with the creation of *Samhitas* under the master-disciple (Guru-Shishya) system, which gradually became institutionalized in the 7th century with the establishment of a department of Ayurveda at the ancient Takshashila University.

Under the Central Council of Indian Medicine (CCIM), the regulatory body for education, the Bachelor of Ayurvedic Medicine and Surgery (BAMS) is awarded to all candidates who successfully complete a five-and-a-half year course including a one-year internship. A postgraduate MD (Ay.)/MS (Ay.) degree is awarded to successful candidates by a recognized educational institution after three years' specialization in various divisions of Ayurveda.

Ayurveda has thus been a tradition in India for thousands of years. It is also practised in various forms in neighbouring countries of South-East Asia, according to their own sociocultural background.

This document provides benchmarks for training of practitioners of Ayurvedic medicine including practitioners, dispensers and distributors; training programmes designed for trainees with different backgrounds; and a review of contraindications, so as to promote safe practice of Ayurvedic medicine and minimize the risk of accidents. Together, these can serve as a reference for national authorities in establishing systems of training, examination and licensure that support the qualified practice of Ayurvedic medicine .

1. Origin and principles of Ayurveda

Ayurveda describes the beneficial, nonbeneficial, happy and unhappy aspects of life. Health is defined as the state of equilibrium of *dosha* (humours), *agni* (digestive juices, enzymes and hormones), *dhatu* (tissues) and the normal excretion of *mala* (waste materials), along with a happy state of *atma* (soul), *indriya* (sensory and motor organs), and *manas* (mind). Ayurveda is a Sanskrit word derived from *ayuh* (life) and *veda* (knowledge), and is also known as the "science of life".

Rigveda (2000 BC) is the oldest recorded document regarding use of plants as medicine in India, and this tradition continued in another ancient text, *Atharvaveda* (1500-1000 BC), which described more plants and introduced basic concepts.

In 1000 BC, Punarvasu Atreya (head of the school of medicine) and Divodas Dhanvantari (head of the school of surgery) imparted knowledge and practical training to their students. The brilliant scholars of these schools faithfully documented the precepts of their masters in their compendia, popularly known as the *Charaka Samhita* (*4,5*) and *Sushruta Samhita* (*6*), respectively.

The *Charaka Samhita* and *Sushruta Samhita* are the basic scriptures of Ayurveda, but they are supplemented by thousands of additions based on observation and experience, none of which affect the sanctity of the basic texts.

1.1 Concepts and fundamental principles

The fundamental theories and principles of Ayurveda practice are derived from experience. These are ascertained by a fourfold examination, i.e. *aptopadesha* (authoritative statement), *pratyaksha* (perception), *anumana* (inference) and *yukti* (rationale) as stated in the *Charaka Samhita*.

Ayurveda is based on the principle that the entire universe and the human body are one, and that the same principles govern both. The changes that occur in the universe with the passage of time also occur in the human body. Hence, substances of natural origin are congenial to the human body and help to maintain the balance of its constituents. Both the universe and the human body are made up of five elements. A balanced state of these elements in the body brings health, and an imbalance brings disease. The elemental composition of the body is explained in the theory of *dosha*, *dhatu* and *mala*, which is the foundation of Ayurveda. The aim of Ayurveda is to achieve equilibrium between *doshas* and *dhatus*, which is believed to bring health and longevity.

The Ayurvedic concepts of physiology, pathology, diagnosis, medicine and therapeutics are based on the doctrine of *tridoshas*: *vata*, *pitta* and *kapha*. They are designated as *doshas* because of their capacity to vitiate other *doshas* and also as

dhatus as they support the body. The *doshas* are present in every cell and move through every channel of the body.

These *doshas* in their normal state are the main supports of the body. In general, the activities of the nervous system are governed by *vata*, thermogenic and endocrine/exocrine glandular activities by *pitta* and the musculoskeletal and anabolic systems by *kapha*. The seven *dhatus*, the basic tissues of the body, also act as supports when they are in a normal state. They are *rasa* (nutritive elements constituting the end product of gastrointestinal digestion - chyle, lymph, tissue fluid etc.), *rakta* (blood), *mamsa* (muscle tissue), *medas* (adipose tissue), *asthi* (cartilage and osseous tissue), *majja* (red bone marrow) and *shukra* (reproductive elements). When normally disposed, the *dhatus* are in their "*prasada*" state, i.e. fit for building substances of the body; when abnormal, they are in a state that is believed to cause disease.

The term *mala* means waste products, and the main excretory wastes of the body are *mutra* (urine), *purisha* (faeces) and *sveda* (sweat). The *agni* (biofire) corresponds to various digestive juices, enzymes, hormones etc, involved in digestion and metabolism.

Thus, Ayurveda aims to maintain or resume equilibrium of *dosha*, *dhatu* and *mala*, patency of *srotas* (channels), and a healthy state of the *agni*.

1.2 Ayurvedic pharmacology

In Ayurveda, substances of natural origin, including whole plants or their parts, animal parts and minerals, are used as medicines, either alone or in combination. In addition, various other measures are used in an attempt to maintain health in a healthy person and alleviate disorders of the body and mind. These substances act on the principles of *samanya* (homologous) and *visesha* (antagonistic) action. Substances possessing homologous properties and actions increase the relevant elemental properties or constituents of the body while those having antagonistic properties or actions decrease those properties or constituents. In cases of disease or imbalance of *dosha*, *dhatu* and *mala*, the rational use of naturally available substances aims to restore normality.

The composition of elements in medicines and the diet is studied in terms of various properties, referred to as *rasa*, *guna*, *virya*, *vipaka* and *prabhava*. The effect and action of the medicines or diet depends on these properties.

- ***Rasa*** (taste): a property of a medicine detected by the tongue. There are six different tastes, each with a predominance of two elements and showing the characteristics of these elements. Administration of a medicine featuring a particular *rasa* enhances that property in the body and decreases its opposite. The six tastes are sweet (*madhura*), sour (*amla*), salty (*lavana*), pungent (*katu*), bitter (*tikta*) and astringent (*kashaya*).

- ***Guna***: a property of a medicine detected by sense organs other than the tongue. They are 20 in number and represent the characteristics of the elements. There are 10 pairs of contrasting characteristics – heavy (*guru*)/light (*laghu*), dull (*manda*)/sharp (*tikshna*), cold (*sita*)/hot (*ushna*), unctuous (*snigdha*)/non-unctuous (*ruksha*), smooth (*slakshna*)/rough

(*khara*), immobile (*sthira*)/mobile (*sara*), soft (*mridu*)/hard (*kathina*), clear (*visada*)/slimy (*picchila*), solid (*sandra*)/fluid (*drava*), bulky (*sthula*)/fine (*sukshma*).

- ***Virya***: denotes the potency of the medicine. There are eight *viryas*, representing the active *gunas*. These can be put into two broad categories – *sita* (cooling) and *ushna* (heating).

- ***Vipaka***: denotes the state of the *rasas* after digestion as demonstrated by their action. There are three *vipakas*. A sweet taste becomes *madhura vipaka*; sour and salty tastes become *amla vipaka* and pungent, bitter and astringent tastes become *katu vipaka*. The same elements predominate as in the original *rasas*, with the corresponding action.

- ***Prabhava***: a special property of some medicines, which cannot be explained by their elemental composition.

1.3 Ayurvedic pathology

According to Ayurveda, there are three main causes of disease, namely *asatmyendriyartha samyoga* (indiscriminate use of senses and their objects), *prajnaparadha* (error of intellect resulting in a loss of discrimination between wholesome and unwholesome with subsequent indulgence in unwholesome diets and behaviour) and *parinama* (seasonal variation, cosmic effects and the effects of time).

Pancha lakshana nidana, the five components of the pathology of a disease, assist in diagnosis. They are *nidana* (causative factors), *purvarupa* (prodromal symptoms), *rupa* (signs and symptoms), *samprapti* (pathogenesis) and *upashaya* (elements antagonistic to disease and causes).

The concept of *shat kriyakala* (six stages of pathogenesis) is vital for an understanding of the pathological states (*samprapti*) of the *doshas* that result in disease. These are *chaya* (accumulation), *prokopa* (aggravation), *prasara* (overflowing), *sthanasamsraya* (localization), *vyakti* (manifestation) and *bheda* (classification or dissolution) of *doshas*.

Disease is treated in one of three main ways, namely *nidana parivarjana* (avoidance of causative and provocative factors), *shodhana* and *panchakarma* (purifying therapies) and *shamana* (palliative therapies).

1.4 Ayurvedic therapeutics

In Ayurveda, the equilibrium of the *dhatus* in healthy individuals is preserved so that disease is prevented. In diseased people, treatment eliminates the disequilibrium between the *doshas*, and the body is restored to normality. Thus equilibrium is the determining factor in all individuals. From this point of view, a wholesome substance is said to be one of two types, either one that maintains health or one that corrects the abnormal *doshas* thereby alleviating the disorders. The former is useful for healthy people and the latter for the diseased. In

addition, *vajikarana* (aphrodisiac) and *rasayana* (rejuvenative/promotive) measures are also prescribed for maintaining equilibrium and preventing senility and related disorders.

Some of the therapeutic measures prescribed in Ayurveda are as follows:

- *brimhana* (promoting body weight; bulk-promoting)
- *langhana* (producing lightness in the body)
- *svedana* (diaphoretic)
- *stambhana* (refrigeration; holding back; checking)
- *rukshna* (roughening)
- *snehana* (uncting/anointing)
- *rasayana* (promotive therapy)
- *vajikarana* (aphrodisiac)
- *samsodhana* (proper purification by elimination of impurities)
- *ahara* (food)
- *achara* (behaviour; conduct).

2. Training of Ayurveda practitioners

2.1 Categories of training

This document describes models of training programmes for different types of Ayurvedic training. These modes are considered adequate by the community of practitioners, experts and regulators of Ayurveda. They can be used as benchmarks to orient training programmes, examinations and licensing systems for Ayurvedic practitioners.

Training for Ayurveda therapy practitioners should take into consideration who is to be trained; what the roles and responsibilities of the future practitioner will be; and what level of education would be required in order to undertake training. Further consideration should be given to the content of the training, the way training is to be provided and by whom.

In order to regulate the practice of Ayurveda therapy and prevent practice by unqualified practitioners, a proper system of examination and licensing is required. Ayurveda therapy experts distinguish three categories of training programmes – Ayurveda practitioner training, Ayurveda therapist training, and training of Ayurveda dispensers and distributors.

Category I: Ayurveda practitioner

- Type I: Limited Ayurvedic education for individuals with no prior medical or other health-care professional training.
- Type II: Limited Ayurvedic education for individuals with prior medical or other health-care professional training.

Category II: Ayurveda therapist

- Type I: Limited education for individuals to be trained in *panchakarma* therapy.
- Type II: Limited education for individuals to be trained in Ayurveda dietetics.

Category III: Ayurveda dispensers and distributors

2.2 Category I, Type I training - Ayurveda practitioners

This training programme is the curriculum designed to produce Ayurveda practitioners who are qualified to practise as primary-contact and primary-care practitioners, independently or as members of a health-care team in various settings. This type of programme consists of at least 2500 hours, including classroom theory and practical sessions and followed by 500 hours of internship training in an Ayurvedic clinic or hospital. Acceptable applicants for this training must have completed high school or pre-university education, or equivalent.

2.2.1 Learning outcomes of the Type I programme

The following skills are common competencies in Ayurveda training, and could be used for another category and different types of training programme as reference.

Technical skills

- understand classical Ayurveda and its applications for the promotion of health;
- diagnose and differentiate diseases/disorders according to Ayurvedic principles and techniques, and formulate an appropriate Ayurvedic treatment plan;
- gain knowledge and skills related to scientific use of medicines and application of therapeutic measures for maintenance of health and alleviation of disease;
- develop specific treatment plans based on the individual signs and symptoms of the patient;
- give nutritional, dietary and preventive medicine advice in terms of Ayurveda;
- review and monitor the health of the patient and modify treatment accordingly;
- independently acquire technical knowledge about diseases not necessarily covered by the programme;
- create a database of clinical experience and research and communicate this information to other practitioners and the public;
- appreciate the expertise and scope of Ayurveda to facilitate intradisciplinary and interdisciplinary cooperation with health-care professionals;
- analyse the merits and demerits of contemporary health-care systems.

Communication skills

- apply Ayurvedic medical terminology appropriately in clinical practice;
- communicate effectively with patients, other health professionals, regulatory bodies, pharmaceutical suppliers, pharmaceutical manufacturers and the general public;
- disseminate clinical observations and findings to other professionals in accordance with ethical principles;
- provide appropriate case history and diagnostic information when referring patients to related specialists.

Skills in responsible and sustainable practice

- practise within regulatory/ethical/safety frameworks;
- identify key business issues and draw on appropriate professional resources;
- willingness to continue to learn and update knowledge.

Research and information-management skills

- understand and acquire new knowledge from Ayurvedic clinical research;
- remain informed about advances in Ayurvedic knowledge and apply that knowledge appropriately in clinical practice.

2.2.2 Components of Ayurvedic training

Sanskrit

Knowledge required of this subject includes basic grammar and other exercises, translation from Sanskrit to English, and vice versa. Upon completion of this subject, students are expected to be able to read, write and understand the *shlokas* in the various texts of Ayurveda (*Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Ashtanga Sangraha*, etc), translate them as required, and understand, apply and interpret them scientifically.

Fundamental principles of Ayurveda

This subject covers the various schools of philosophy, including relations between the universe and the human being, *ayuh* (life), the tripod of *prakriti*, *purusha* and *manas*, the correlation between *indriya* (organs) and their *arthas* (object), limitations of sensory perception, details of *nava dravya* (nine kinds of primordial substances), and theories and principles of *panchamahabhuta* (five elements), etc.

Upon completion of this subject, students are expected to be able to describe the philosophical concepts of Ayurveda and to apply these concepts in physiology, pathology, clinical diagnosis and clinical practice. They are also expected to demonstrate competence in diagnosis and differentiation of disorders and their management as indicated in Ayurveda.

Ayurvediya sharira rachana
This includes the constitution of body according to the *panchabhuta* system, embryological and genetic considerations, anthropometry, various body tissues, organs and vital points as described in Ayurveda.

Upon completion of this subject, students are expected to be able to describe the details of fertilization; sex determination and differentiation; organogenesis and the human body in terms of *dosha*, *dhatu* and *mala*; and apply these concepts in clinical diagnosis and practice.

Ayurvediya kriya sharira
This includes a detailed description of *tridosha*, *saptadhatu* (seven tissues), *upadhatu* (secondary tissues), *mala*, *srotas*, the 13 *agni* and their functions, digestion and metabolism, sensory and motor organs and the mind, and their characteristics and functions, etc.

Upon completion of this subject, students are expected to be able to describe the normal and abnormal states and functions of *dosha*, *dhatu* and *mala*, *srotas*, *agni* and sensory and motor organs and the mind, and apply these concepts to determine *prakriti* (personality and temperament) in clinical diagnosis and clinical practice.

***Svasthavritta* (personal, social and preventive medicin*e*), yoga and naturopathy**
This covers the daily and seasonal regimen of an individual relating to: food; sleep; social, sexual and other activities; the basic concepts, components and practice of yoga; the concepts of naturopathy and methods of treatment advocated for various disorders; components of social hygiene; nutrition; measures to prevent the transmission of communicable and noncommunicable diseases; national health programmes and biostatistics.

Upon completion of this subject, students are expected to be able to describe and apply the principles of diet, sleep, behaviour, hygiene and social hygiene for healthy and sick people. In addition, they are expected to be able to describe the elements and application of yoga and naturopathy in health and illness.

***Dravyaguna vigyana* (pharmacology/*materia medica*)**
This covers classification, identification, *guna*, *karma* (properties and action), therapeutic indications, formulations, clinical applications, administration, standardization, quality control and safety of Ayurvedic medicines.

Upon completion of this subject, students are expected to be able to: describe at least 250 commonly used plants in Ayurveda (see Annex 3); and apply these herbs according to Ayurvedic theory, particularly with respect to selection of appropriate medicines, formulations and basic knowledge and skills in identifying raw and processed Ayurvedic herbs, including their standardization.

***Rasashastra* and *bhaishajya kalpana* (alchemy and pharmaceutical sciences)**
This covers classification, identification, manufacturing processes *shodhan* (purification) and *maran* (calcination), standardization and quality control of single and compound Ayurvedic formulations, as well as pharmacotherapeutics, use of Ayurvedic mineral and metallic medicines and pharmacovigilance.

Upon completion of this subject, students are expected to: possess the basic knowledge and skills needed to identify processed and unprocessed metals and minerals; to manufacture, process and standardize Ayurvedic medicines; and to have a knowledge of pharmacotherapeutics.

***Agada tantra* and *vyavahara ayurveda* (toxicology and jurisprudence)**
This deals with poisons and toxic substances of plant, animal, mineral and metallic origin; food poisons; incompatible foods; tests for poisonous substances and their treatment; and jurisprudence aspects of the clinical practice of Ayurveda.

Upon completion of this subject, students are expected to be able to describe various poisonous substances and the tests and treatments for them, and handle jurisprudence aspects of Ayurvedic practice.

***Roga nidan* and *vikriti vigyana* (diagnostics and pathology)**
This includes pathological states of *dosha*, *dhatu*, *mala*, *agni* and *srotas*, *pancha lakshana nidana* (diagnostics); examination and assessment of *prakriti* (personality and temperament); *shat kriyakala*; patient and disease; Ayurvedic diagnostics and differential diagnosis.

Upon completion of this subject, students are expected to be able to describe the examination of the patient, pathogenesis, diagnosis and lines of treatment for common diseases.

***Kayachikitsa* (general medicine)**
This includes: etiology; pathogenesis; clinical manifestations; disease differentiation; treatment principles and methods, and appropriate formulae for common physical and mental diseases; *shodhana* (purificatory) and *shamana* (palliative) treatments; *panchakarma* (five purifying procedures); theory and practice of medical psychology; psychological factors and their relevance to mental health; psychological counselling,; diagnosis and mental health promotion.

Upon completion of this subject, students are expected to be able to describe the basic methods of differentiation of diseases; and to manage common internal, external and psychological ailments using Ayurvedic medicines, including the basic concepts, methods and application of *panchakarma*.

***Shalya tantra* (general surgery)**
This covers: etiology; pathogenesis; clinical manifestations; disease differentiation; principles and methods of treatment of diseases due to various causes, including foreign bodies, as well as the instruments used in diagnosis and treatment. It includes special *ksharasutra* treatment procedures for anorectal disorders and various surgical and parasurgical procedures.

Upon completion of this subject, students are expected to be able to: demonstrate the basic practical skills of sterilization and disinfection; describe the basic methods of differentiation of diseases and manage common surgical problems using Ayurvedic medicines, including application of *ksharasutra* and various parasurgical procedures.

***Shalakya tantra* (ear, nose and throat medicine, including ophthalmology and dentistry)**
This includes etiology, pathogenesis, clinical manifestations, disease differentiation, principles and methods of treatment of diseases of the head, including ear, nose, throat, teeth and eye. It also covers various special methods of treatment, including *kriyakalpa* and other medicines.

Upon completion of this subject, students are expected to be able to describe the basic methods of differentiation of diseases and address common diseases of the head using Ayurvedic medicines and procedures.

***Striroga and prasutitantra* (gynaecology and obstetrics)**
These include: etiology; pathogenesis; clinical manifestations; disease differentiation; treatment principles and methods and appropriate medical formulations for common gynaecological diseases, as well as Ayurvedic methods of preconception, antenatal, perinatal and postnatal care.

Upon completion of this subject, students are expected to possess the knowledge and skills needed for comprehensive diagnosis and clinical management of common gynaecological diseases using Ayurvedic concepts and methods, and application of Ayurvedic methods of obstetric care.

***Kaumara bhritya* and *bala roga* (paediatrics)**
This covers *samskara* (rites associated with significant developmental milestones); care of the mother during lactation; care of the child up to 16 years of age; etiology; pathogenesis; clinical manifestations; disease differentiation; treatment principles and methods, and appropriate medical formulae for common diseases of children.

Upon completion of this subject, students are expected to possess the knowledge and skills needed for comprehensive care of mother and child and for the diagnosis and clinical management of common childhood diseases using Ayurvedic medicine.

***Rasayana* and *vajikarana* (promoting and rejuvenative treatments and aphrodisiacs)**
These cover the basic concepts and methods of rejuvenation and care of weak and old people, and concepts and methods for managing sexual and infertility disorders.

Upon completion of this subject, students are expected to possess the knowledge and skills needed for care of weak and disabled people, diagnosis and clinical management of diseases of the elderly, and menopausal complaints, etc, using Ayurvedic concepts, methods and medicines.

Pathya apathya **(do's and don'ts of diet and activity)**
This covers the concept of *ahara* (diet) and its importance; *ayushyakara* and *urjaskara ahara*; importance of *ahara* in health and disorders; *ahara dravya* and their properties and classification; *hita avam ahita* (beneficial and harmful) *ahara* based on *doshika prakriti*; foodstuffs and their action; use of *shadrasa* in *ahara* for health; vegetables and fruits and their properties; types of water and their importance in *ahara*; milk and milk products in health and disease; various diets; adjuvants of food; *viruddha ahara*, *pathya* and *apathya ahara* in various disorders – *jvara*, *atisara*, *kamala*, *pandu*, *raktapitta*, *unmada*, *apasmara*, *prameha*, *madhumeha*, etc; and *satmya* and *asatmya ahara*.

Upon completion of this subject, students are expected to possess and apply appropriate knowledge and prescribe a suitable diet for the patient's condition.

2.2.3 Components of western medical training

The following essential components of western medicine should be included.

Health regulations and medical ethics

This covers health regulations, medical ethics and the professional code of ethics, including principles of professional behaviour and issues related to various laws and regulations pertaining to the practice of Ayurveda.

Upon completion of this subject, students are expected to be able to explain the legal requirements relating to Ayurvedic practice including the relevant local health acts, legal responsibilities, standards of practice and related regulations, such as endangered-species protection. They should be able to identify and explain the ethical principles of Ayurvedic practice.

Human anatomy

Basic theory of human anatomy, including structure of the normal human body and components of body systems, the names, forms and locations of the structures of the human body and the morphological structure of every organ, as well as surface anatomy landmarks of bones, muscles and skin.

Upon completion of this subject, students are expected to be able to demonstrate an understanding of the terminology of anatomy and describe the morphological structure of normal organs.

Human physiology

This covers the basic concepts and theory of physiology, major functions of human organs and systems, homeostasis, normal physiological parameters, factors influencing them and their regulation.

Upon completion of this subject, students are expected to be able to demonstrate the application of measurement methods for human functional activities and basic practical skills; as well as comprehensive abilities in observing, analysing and summarizing problems by applying theoretical knowledge.

Pharmacology

This subject covers basic concepts, theory and terminology of pharmacology, including pharmacological actions, indications, contraindications, adverse medical reactions, medicine interactions and clinical application of the main medicines in each category.

Upon completion of this subject, students are expected to be able to demonstrate an understanding of pharmaceutical mechanisms and the application of pharmacy and pharmaceutical sciences in Ayurveda, the practical skills of basic laboratory methods of pharmacology and the sound application of this knowledge in order to understand the action of Ayurvedic medicines and formulate prescriptions appropriately.

Pathophysiology and medical diagnosis

This subject covers concepts and etiological factors of disease, including basic theory and concept of diseases; clinical pathology, radiology and diagnostic imaging; and clinical decision-making through comprehensive analysis of data from physical examinations and laboratory tests.

Upon completion of this subject, students are expected to be able to conduct clinical interviews, obtain and analyse case histories, and undertake a range of physical examinations, in order to establish a diagnosis.

Biochemistry

This subject covers basic concepts and principles of biochemistry, routine clinical biochemical investigations and their interpretation, the role of clinical biochemistry in diagnosis, and the literature of clinical biochemistry.

Upon completion of this subject, students are expected to be able to interpret the results of routine clinical biochemistry investigations, understand the results of diagnoses, and extract and present relevant biochemical literature.

Clinical medicine

This subject covers basic knowledge and theory of internal and external medicine, etiology, pathogenesis, clinical manifestation, diagnosis and medical treatment of common diseases, modern surgical concepts, principles and practices for managing simple surgical problems, modern medical and surgical procedures for eye and ear, nose and throat disorders, gynaecology, obstetrics and paediatrics.

Upon completion of this subject, students are expected to be able to describe and apply basic methods for diagnosis and clinical management of common internal medicine and surgical conditions.

Table 1 - Indicative Category I, Type I curriculum for Ayurveda practitioners

Divisions	Subject	Theory	Practical	Total
Components of fundamental principles of Ayurveda (including history)	History of Ayurveda	25	-	25
	Sanskrit	100	-	100
	Padartha Vigyana (Ayurvedic philosophy)	100	-	100
	Rachana sharira (anatomy)	175	100	275
	Kriya sharira (physiology)	200	100	300
Para/preclinical components of Ayurveda	*Rasashastra avam bhaisajya kalpana* (pharmaceuticals of Ayurveda)	150	100	250
	Dravyaguna (*materia medica* of Ayurveda)	150	100	250
	Agadtantra (toxicology)	40	10	50
	Vikriti vigyana (pathology)	100	100	200
	Svasthavritta and yoga (personal and social hygiene including dietetics)	100	50	150
Clinical components of Ayurveda	*Kaya chikitsa* (general medicine including *panchakarma, rasayana* and *vajikarana*)	400	150	550
	Shalya tantra (general surgery and parasurgical techniques)	35	15	50
	Shalakya tantra (eyes, ears, nose, throat, and teeth)	35	15	50
	Prasuti tantra avam stri roga (gynaecology and obstetrics)	40	10	50
	Kaumara bhritya (paediatrics)	40	10	50
	Medical ethics and health regulations related to traditional medicine	20	-	20
	Dissertation	30	-	30
	Total	**2500 hours**		
	Supervised clinical training	**500 hours**		

2.3 Category I, Type II training - Ayurveda practitioners

This training programme is for indivduals with prior medical or other health professional training. This programme typically consists of at least 1500 hours including classroom theory and practical sessions and following a minimum of 500 hours of internship training in an Ayurvedic clinic or hospital. The programme can be adjusted depending on the trainee's background. An applicant should have completed medical or other health-care professional training.

Table 2 - Indicative Category I, Type II curriculum for Ayurveda practitioners

Divisions	Subject	Theory	Practical	Total
Components of fundamental principles of Ayurveda (including history)	History of Ayurveda	20	-	25
	Sanskrit	20	-	100
	Padartha vigyana (Ayurvedic philosophy)	80	-	100
	Rachana sharira (anatomy)	80	30	275
	Kriya sharira (physiology)	80	40	300
Para/preclinical components of Ayurveda	*Rasashastra avam bhaisajya kalpana* (pharmaceuticals of Ayurveda)	70	45	115
	Dravyaguna (*materia medica* of Ayurveda)	80	65	145
	Agadtantra (toxicology)	30	20	50
	Vikriti vijyana (pathology)	80	40	120
	Svasthavritta and yoga (personal and social hygiene including dietetics)	60	40	100
	A brief introduction to *Charaka Samhita* (classical text of Ayurveda)	30	-	30
Clinical components of Ayurveda	*Kaya chikitsa* (general medicine including *panchakarma, rasayana* and *vajikarana*)	150	80	230
	Shalya tantra (general surgery and parasurgical techniques)	50	40	90
	Shalakya tantra (eyes, ears, nose, throat, and teeth)	50	20	70
	Prasuti tantra avam stri roga (gynaecology and obstetrics)	50	30	80
	Kaumara bhritya (paediatrics)	40	20	60
	Medical ethics and health regulations related to traditional medicine	20	-	20
	Dissertation	-	-	-
	Total	**1500 hours**		
	Supervised clinical training	**500 hours**		

2.4 Category II, Type I training - Ayurveda therapists

This training programme enables the trainees to understand the fundamental principles of *panchakarma* therapy and to become *panchakarma* therapists. The programme requires at least 1000 hours, including classroom theory of 600 hours and practical teaching of 400 hours and followed by a minimum of 400 hours of supervised training in a *panchakarma* therapy centre. Acceptable applicants for this type of training must have completed high school or pre-university education, or equivalent. The core syllabus gives the trainee the knowledge of *panchakarma* procedures and the ability to carry out *panchakarma* therapy:

Table 3 - Indicative Category II, Type I curriculum for Ayurveda therapists

Subject	Theory	Practical	Total
Basic theory of Ayurveda	20	-	20
Philosophy of Ayurveda	30	-	30
Principles of therapeutics in Ayurveda	30	30	60
Introduction to *rachana* and *kriya sharira*	50	45	95
Dietary and medicinal substances in Ayurveda and concepts of health and disorders in Ayurveda	60	15	75
Introduction to *panchakarma*	20	25	45
Basic concepts of *panchakarma*	80	-	80
Importance of *panchakarma* therapy	30	-	30
Snehana karma, its indications and contraindications	30	50	80
Complication of excessive *snehana* and its management	20	5	25
Svedana karma, its indications and contraindications	20	50	70
Complication of excessive *svedana* and its management	20	5	25
Vamana karma, its indications and contraindications	40	25	65
Virechana karma, its indications and contraindications	30	15	45
Anuvasana karma, its indications and contraindications	20	25	45
Asthapana karma, its indications and contraindications	25	20	45
Sirovirechana karma, its indications and contraindications	10	10	20
Raktamokshana, its indications and contraindications	20	10	30
Shirodhara, shirovasti, pindasveda, annalepa, kayaseka and *shirolepa*	15	50	65
Samsarjana karma (post-operative management)	10	10	20
Preparation of diet articles and materials used in *panchakarma* procedures	20	10	30
Total	**1000 hours**		
Supervised clinical training	**400 hours**		

2.5 Category II, Type II training - Ayurveda dieticians

This programme is for persons who wish to become Ayurveda dieticians. The programme is to provide a comprehensive understanding of Ayurveda dietetics and to understand the importance of diet and nutritional elements in both

healthy and diseased persons. The programme requires at least 1000 hours, including classroom theory of 600 hours and practical teaching of 400 hours.

The core syllabus is designed in accordance with the basic theory of Ayurveda to give the trainee the knowledge and ability needed to practise as an Ayurveda dietician.

Table 4 - Indicative Category II, Type II curriculum for Ayurveda dieticians

Subject	Theory	Practical	Total
Basic principles of Ayurveda	50	-	50
Philosophy of Ayurveda	40	-	40
Introduction to *rachana and kriya sharira*	55	65	120
Svasthavritta and yoga	40	60	100
Concept of *ahara* and its importance	50	-	50
Ayushyakara and *urjaskara ahara*	25	-	25
Importance of *ahara* in health and disorders	50	-	50
Aahara dravya, their properties and classification	20	20	40
Hita avam ahita ahara based on *doshika prakriti*	20	30	50
Ahara avam jatharagni	30	-	30
Ritucharya avam ahara	20	15	35
Dinacharya avam ahara	20	15	35
Foodstuffs and their action	5	5	10
Use of *shadrasa* in *ahara* for health	10	10	20
Types of food and drinks	10	10	20
Cereals and pulses and their properties	5	10	15
Vegetables, fruit and salads and their properties	10	15	25
Fermented liquors	10	5	15
Types of water and their importance in *ahara*	5	10	15
Milk and milk products in health and disease	15	-	15
Sneha varga (edible fats and oils)	15	10	25
Meat, fish and poultry products	10	15	25
Types of honey and medicinal uses	5	5	10
Kritanna varga (various dietary forms)	10	20	30
Adjuvants of food	5	5	10
Anupana in accordance with *vata, pitta* and *kapha doshas*	10	15	25
Viruddha ahara	20	-	20
Satmya and *asatmya ahara*	10	-	10
Pathya and *apathya ahara* in various disorders – *jvara, atisara, kamala, pandu, raktapitta, unmada, apasmara, prameha, madhumeha,* etc.	15	35	50
Importance of *ahara* in yogic practices	10	25	35
Total	**1000 hours**		

3. Training for dispensers and distributors of Ayurveda

Ayurvedic dispenser and distributor training has to provide knowledge and skills relating to mechanisms, procedures and techniques for the clinical dispensing and distribution of Ayurvedic medicines. It forms part of the practice of Ayurveda and is significantly different from pharmacy relating to other medicines. This difference strongly influences the attitude and approach to health care of dispensers and distributors in Ayurveda.

Education in the dispensing and distribution of Ayurveda aims to train personnel to perform processing, preparation, identification, dispensing and distribution under the guidance of the theories of Ayurveda, such as *panchabhautik* (five basic elements), *tridoshas* (humours), holistic approaches, etc. Ayurvedic dispensing aims to distribute appropriate Ayurvedic medicines for the treatment of a wide range of clinical conditions. Ayurvedic distribution provides proper Ayurvedic medicines for dispensing.

As distributors and dispensers in primary contact health care, Ayurveda practitioners, dispensers, and distributors recognize the importance of quality of Ayurvedic medicines. Thus, quality control of Ayurvedic medicines is a key aspect of dispensing and distribution in Ayurveda.

The *Charaka Samhita* (1000 BC) and *Sushruta Samhita* (1000 BC) are the original texts of Ayurveda. Additional, newer documents describe in detail the processing, manufacture, dispensing and distribution of Ayurvedic medicines.

In 1970, the *Ayurvedic formulary of India* (*1,2*) was published in two volumes by the Government of India. It contains over 600 compound Ayurvedic formulations.

In 1999, Part I of the *Ayurvedic pharmacopoeia of India* (*3*) was published by the Government of India. To date, five volumes have been published.

A distinction needs to be made between training of dispensers and of distributors.

The former is training for individuals who have completed high-school level education or equivalent, but who have no prior medical or other health-care professional training. The latter is training for candidates who have completed high-school level education or equivalent, and for existing Ayurveda distributors who have little or no formalized training.

Depending on their experience, existing distributors may be exempted from clinical dispensing training in a community or hospital pharmacy, based on credit awarded for prior training or experience.

3.1 Curriculum for dispensers of Ayurveda

This training programme is for dispensers of Ayurveda. The programme includes a minimum of 1000 hours of student-teacher contact consisting of theory and laboratory practice, including 200 hours of clinical dispensing and community work under the supervision of qualified dispensers of Ayurveda. Acceptable applicants will typically have completed high school education or equivalent.

Table 5 - The core syllabus for dispensers of Ayurveda

Subject	Theory	Practical	Total
Introduction to Ayurveda and brief history of the different branches of Ayurveda	10	-	10
Rachana sharira (anatomy) and *Kriya sharira* (physiology)	100	30	130
Vyadhi (disease, concept, origin)	100	-	100
Vyadhi parichaya (major diseases of different systems) and measurement of temperature, pulse, blood pressure, etc.	100	20	120
Ayurveda aushadha gundharma shastra (pharmacology)	100	50	150
Ayurveda aushadha nirmana shastra (pharmacy) (*panchavidha kashaya kalpana*, medicine of metal and mineral origin, *taila*, ghee identification of compound medicines)	100	60	160
Dispensing, hospital and clinical pharmacy	70	40	110
Pharmaceutical administration and regulations	20	-	20
Total	**800 hours**		
Supervised clinical training	**200 hours**		

3.2 Curriculum for distributors of Ayurveda

Practitioners, experts and regulators of distribution of Ayurveda consider this training programme as the relevant benchmark.

This programme is for distributors of Ayurveda. The programme consists of at least 300 hours of student-teacher contact, covering both theory and laboratory practice, including 50 hours of practical training under the supervision of qualified dispensers of Ayurveda in a community or hospital setting. Acceptable applicants will typically have completed high school education or equivalent.

Table 6 - The core syllabus for distributors of Ayurveda

Subject	Theory	Practical	Total
Introduction, brief history of Ayurveda and the different branches of Ayurveda	4	-	4
Fundamental principles of Ayurveda	-	-	-
Brief introduction to *rachana sharira* (anatomy)	3	-	3
Structure and description of major organs (heart, kidney, liver, etc.)	6	-	6
Brief introduction to *kriya sharira* (physiology)	3	-	3
Different systems, e.g. gastrointestinal tract, excretory, nervous	3	-	3
Swastha (Ayurvedic theory of normal health)	5	-	5
Dosha, dhatu, mala	5	-	5
Vyadhi (concept of disease origin)	6	-	6
Different diseases in different seasons (due to *dosha* involvement)	5	-	5
Vyadhi parichaya (major diseases of different systems)	8	-	8
Measurement of pulse, temperature, blood pressure, respiration	6	2	8
Ayurved aushadha gundharma shastra (pharmacology)	3	-	3
Medicine action, theory of *rasa, guna, veerya, vipaka, prabhava*	4	-	4
Dravyaguna parichaya (identification of plants)	20	10	30
Ayurveda aushadha nirmana shastra (pharmacy)	3	-	3
Panchavidha kashaya kalpana and other herbal medicinal preparations	6	-	6
Minerals, metals and their preparations	4	-	4
Introduction to *taila*, ghee, etc.	4	-	4
Identification of compound medicines (*churna*, *abaleha*, etc.)	6	4	10
Dispensing, community and hospital pharmacy	-	-	-
Introduction – selection, cleaning, cutting, processing	10	6	16
Prescriptions – reading, understanding and handling prescriptions	16	4	20
Packaging, labelling, storage, etc.	6	4	10
Principles and procedures adopted in dispensing mixtures, solutions, powders (*bhasmas*), external preparations, suppositories, etc.	10	10	20
Community pharmacy – organization and structure of retail and wholesale pharmacies, maintenance of pharceutical stores	9	-	-
Hospital pharmacy and pharmaceutical distribution (outpatients and inpatients)	17	10	27
Medicine information, records, reports, record-keeping, data processing	14	-	14
Pharmaceutical administration and regulations	14	-	14
Total	**250 hours**		
Supervised clinical training	**50 hours**		

4. Safety issues

This section of the document outlines issues of safety, incompatibilities and contraindications considered important by the community of Ayurvedic practioners. Please refer to other relevant WHO guidelines for general safety issues in the use of herbal medicines. (*7,8,9,10*). The community of practitioners of Ayurveda notes that adverse events may be caused by contamination, adulteration, misidentification, inappropriate use of species and/or prescribing dosages above accepted levels.

4.1 Use of Ayurvedic medicines

A medicinal plant should never be collected from an anthill, a dirty or marshy place, gravelly land, a graveyard or a footpath. A plant infected or spoiled by fire, cold, water or any other damage should not be used for preparing a medicine.

The practitioner must carefully examine the following factors in a patient before deciding on the patient's humoral constitution and the medicine or therapy to be administered:

- *dushya*
- *dosha*
- *bala* (physical strength)
- *kala* (time)
- *anala* (digestion; fire)
- *prakriti* (general constitution)
- *vaya* (age)
- *satva* (mental strength)
- *satmya* (favourable factors)
- *ahar* (diet)
- *avastha* (stage of the illness)

4.2 Safe use of metals, minerals and poisonous substances

Metals, minerals and poisonous substances must be properly processed in order to be used as a medicine or in a medical formulation, i.e. *shodhan* for poisonous substances and *shodhan* and *maran* (wherever necessary) for metals and minerals, as improperly purified substances are likely to create toxic effects.

Adverse effects of improperly processed *dravya (bhasma)*
Metals and minerals for *maran* require specific processing in order to decrease the risk of adverse effects. Metallic and mineral medicine formulations (*bhasmas*) should also be subjected to the following tests for purification before administration:

- *varitaratwa* – should float on water;
- *rekhapurnatwa* – should be fine enough to fill the ridges on the surface of the fingers;
- *nirutthatwa* – the metal should not make an appearance in its original form after subjecting the *bhasma* to processing;
- *nishchandratva* – should be lustreless;
- *nishkalanka* – specifically for *tamra* (copper) *bhasma*; no green colour should appear when *tamra bhasma* is mixed with curd or any sour substance.

Ayurvedic practitioners should warn patients when metals, minerals or poisonous substances are included in the prescription. Information regarding the use of these substances, signs of potential adverse effects and recommendations for emergency response to these adverse events should be provided.

4.3 Incompatible combinations

Medicines having opposite *veerya* (temperamental potency) should not be combined.

***Viruddha ahar* (incompatible dietary combinations) including:**

- fish and milk
- meat and milk
- sour substances and milk
- salt and milk
- fruits and milk
- peas and milk
- leafy vegetables and milk
- radish leaves and jaggery
- banana with buttermilk or curd
- curd and ghee
- storage of ghee in brass containers for more than 10 days
- frying of long pepper in the same oil in which fish has been fried.

4.4 Adverse reactions and contraindications

Accidents and adverse reactions

Accidents and adverse reactions may occur if:

- plants, whether poisonous or not, are not purified before preparation of Ayurvedic medicine as per guidelines of Ayurveda;
- metals and minerals are not purified during manufacture of pharmaceutical forms;

- precautions necessary at the time of collection of various parts of plants are overlooked;
- the practitioner's knowledge of poisonous species and metal-containing medicines and their dosage forms is inadequate;
- substandard or low-quality medicines are used;
- medicines are used for indications that are not approved;
- medicines are misused;
- medicines interact adversely with chemicals, other medicines and unwholesome food;
- the provider lacks skilled knowledge of constituents of mineral origin, medicines and their dosage forms.

4.5 Contraindications in therapy

Knowledge of contraindications is just as important with respect to therapeutic measures as it is with respect to medicines. It helps to avoid exacerbating disorders and may prevent adverse effects.

Panchakarma therapy

Panchakarma is a group of five therapeutic procedures: *vaman* (emesis), *virechan* (purgation), *anuvasan* and *asthapan basti* (evacuation enema), *shirovirechan* (errhine – procedure inducing nasal discharge) and *rakta mokshan* (blood-letting) to evacuate vitiated *doshas* from the body.

For each therapy certain contraindications have been noted which need to be strictly respected if the patient is to have beneficial rather than adverse effects.

- ***Vamana***

Should not be performed on an elderly person or person with defective vision, wasting due to chest injury, emaciation, piles, facial paralysis, convulsions, recent pregnancy, internal haemorrhage directed upwards, gastrointestinal worms, severe constipation, roughness of the body including skin, intra-abdominal swelling, anaemia, abdominal disorders, jaundice or obesity.

- ***Virechana***

Should not be performed on children, women during pregnancy and puerperium, elderly individuals or persons suffering from fatigue, fear, acute fever, poor digestion, internal haemorrhage directed downwards, rectal wounds, diarrhoea, foreign bodies, consumption, hard bowel movements, thirst, indigestion, or after nonunctuous enema or excessive unction.

- ***Asthapan basti***

Should not be given to a person whose bowels have not been evacuated (by *vamana* or *virechana* after administration of enema) as otherwise the active fraction of the medicine will not circulate.

- ***Shirovirechana***

Should not be performed before or after intake of water, wine, poison or fatty substances, after taking meals, after a headbath, before a bath, after blood-letting, after evacuation and administration of an enema, when a person is suffering

from acute coryza (rhinitis), dyspnoea or cough, or in cloudy weather other than the rainy season, except in cases of emergency.

- ***Raktamokshana***

Should not be performed in persons under 16 or over 70 years of age, women during pregnancy and puerperium, non-uncted persons, after blood-letting, after intake of *sneha* and use of *panchakarma*, or in persons suffering from *vatika* disorders, indigestion, internal haemorrhage, dyspnoea, cough, diarrhoea, abdominal disorders, vomiting, anaemia or general anasarca (congestion).

Other therapies

- ***Snehana***

Should not be performed on a woman after premature delivery or a person having very poor or intense digestion, obesity, debilitation, diarrhoea, throat disorders, poisoning, fainting, vomiting, anorexia, thirst, alcoholism, *kapha*, *amadosa* or *urustambha* or after snuffing, enema or purgation.

- ***Svedana***

Should not be performed on a woman during pregnancy, menstruation or after delivery, or on an excessively obese person, debilitation, fainting, wasting due to chest injury, poisoning, alcoholism, defective vision, abdominal disorders or erysipelas, prolapsed rectum, malaise, anger, anxiety, fear, hunger, thirst, jaundice, anaemia, cauterization in the anal region, consumption, *prameha*, *kustha* and *vatarakta*, after intake of milk, curd, fatty substances and honey, or after purgation.

- ***Anjana***

Should not be used on a fearful person, after emesis or purgation, after meals, while feeling natural urges or anger, fever, eyestrain, headache, consumption, loss of sleep, daytime sleep, indigestion or thirst, after headbath or intake of smoke or wine, after exposure to fire and sun or when sun is not visible.

- ***Kshara karma***

Kshara (caustic alkali) should not be used on debilitated, timid or aged people, children, people suffering from anasarca, abdominal enlargement, internal haemorrhage, advanced fever, *prameha*, impotence or displaced testicles, pregnant or menstruating women or women with upwards displacement of the uterus.

- ***Agnikarma***

Agnikarma should not be performed in the autumn or summer, on a person of *paittika* constitution, a patient with internal haemorrhage, ruptured viscera or an unextracted foreign body, debilitated person, children, aged persons, timid persons or those with multiple wounds or contraindicated for *svedana*.

4.6 Use of metals, minerals and poisonous substances

Metals, minerals and poisonous substances must be properly processed as prescribed in order to be used directly as a medicine or in a medical formulation, i.e. *shodhan* for poisonous substances and *shodhan* and *maran* (wherever necessary) for metals and minerals. Dispensers and distributors of Ayurveda

should be able to understand these prescriptions and be able to verify that they are correct according to the principles and practice of Ayurveda. The Ayurveda dispenser or distributor should also be able to refer back to the prescriber for confirmation of the prescription, when appropriate.

Dispensers and distributors of Ayurveda should be able to recognize the signs of adverse effects and know the appropriate procedure to deal with an emergency situation. A few of these adverse effects are described below:

- burning sensation
- constipation
- pain and burning in abdomen
- restlessness
- giddiness and syncope
- vomiting
- loss of strength, vigour, libido
- poor shine of the skin
- brightness of the eyes and general health
- skin diseases and other conditions.

Dispensers and distributors of Ayurveda should warn patients when metals, minerals or poisonous substances are included in the prescription. Information regarding the use of these substances, signs of potential adverse effects and recommendations for the appropriate emergency response in the event of adverse effects, should be provided.

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Annex 1: Glossary

Acharya
A teacher or preceptor

Agada tantra
Toxicology

Agni
Digestive juices, enzymes and hormones; fire

Ahara
Diet; food

Ahara avam jatharagni
Food and digestive fire

Ama
Raw or uncooked; immature; undigested; immature *rasa*

Amadosa
Clinical manifestations resulting from undigested food

Anala
Digestion

Anjana
The act of applying an ointment or pigment, embellishing; black pigment or collyrium applied to the eyelashes or the rim of the eyelid; it may be in dry, wick or semisolid form

Annalepa
Application of food substances externally

Anumana
Inference

Anupana
A fluid vehicle in medicine; drink taken with or after medicine

Anuvasana basti
Oil enema of a retention type

Aptopadesha
Authoritative statement

Asatmya
Unwholesome or disagreeing; unsuitable for oneself

Ashodhit
Impure

Asthapan basti
Enema; a kind of medicated enema

Atisara
Frequent loose motions; diarrhoea

Atma
Soul; oneself

Avastha
Stage of illness

Ayushyakara
Beneficial to life

Bala
Physical strength

Bhaishajya kalpana
Ayurvedic pharmaceutical science

Bhasma
The end product of processing of metals and minerals

Charak a Samhita
A classical text of Ayurveda

Churna[1]
Powder of dried medicinal plant

Dhatu
Tissues – *rasa* (chyle, lymph, etc), *rakta* (blood), *mamsa* (muscle), *medas* (adipose tissue), *asthi* (cartilage and bone), *majja* (red bone marrow), and *shukra* (reproductive elements)

Dinacharya
Daily lifestyle; daily regimen

Dosha
Humours

Doshika prakriti
Doshika nature

Dravya
Substance; elementary substance; medicinal substance or medicine (with reference to Ayurveda)

Dravyaguna
The science of identification, properties, actions and therapeutic uses of medicinal substances (*dravya* = substance, food/medicine, *guna* = properties)

Dushya
Corruptible

Ghana
Decoction of vegetable medicines solidified by evaporation at a low temperature to obtain solid material

Guna
Properties

Hita avam ahita
Beneficial and harmful (*hita* – beneficial, *ahita* – harmful)

[1] Williams MM. *A Sanskrit-English dictionary*, Delhi, Motilal Banarasidass Publishers Private Limited, reprinted 1993.

Indriya
Sensory and motor organs

Jatharagni
Digestive faculty of the stomach; digestive fire

Kala
Time

Kalpana
Pharmaceutical forms

Kapha
Dosha governing the musculoskeletal and anabolic systems

Karma
Properties and action of a medicine; action

Kayaseka
Medicated sprinkling of the body

Kritanna varga
Various dietary forms

Kriya sharira
Ayurvedic human physiology

Kshara
A corrosive alkaline medicinal preparation obtained from the ash produced by burning plants; a kind of medicine form converted to alkali

Ksharasutra
Treatment procedures for anorectal disorders

Kustha
Diseases of the skin, including leprosy

Madhumeha
A disease in which honey-like, sweet urine is passed

Mala
Bodily waste products – *mutra* (urine), *purisha* (faeces), *sveda* (sweat)

Manas
Mind

Maran
Incineration of a metallic or mineral product

Nidan
Inquiry into the causes of a disease

Niruha basti
An enema with decoctions used for cleansing the lower gut

Nirutthatwa / Nishkalanka
Test for improperly processed metal

Nishchandratva
Test for improperly processed metal. In this test, the *bhasma* is observed under bright sunlight to see whether the lustrous particles are present. Presence of lustrous particles indicates the need for further incineration.

Paittika
One of the three doshas

Pancha lakshana
Diagnostics

Panchakarma
Five purifying procedures; specifically:

- *vamana*[1]– emesis
- *virechana* [1]– purgation
- *niruha basti* [1]– a purging clyster/enema not of an oily kind
- *sirovirechan*[1] – nasal instillation inducing nasal discharge
- *raktamokshan* – blood-letting

Panchavidha kashaya
Five types of pharmaceutical procedures/forms

Panchavidha kashaya kalpana
The Ayurvedic term for dosage forms

Pandu
Pallor, whiteness

Pathya
Wholesome for mind and body

Pindasveda
Bolus perspiration

Pitta
One of the three *doshas,* governing the thermogenic and endocrine/exocrine glandular system

Prakriti
Personality and temperament; natural form

Prameha
Urinary disease

Prasuti tantra avam stri roga
Obstetrics and gynaecology; women's disorders

Pratyaksha
Perception; direct observation

Rachana sharira
Ayurvedic human anatomy

Raktamokshana
Blood-letting

Raktapitta
Bleeding disorder; spontaneous haemorrhage from mouth and nose; internal haemorrhage

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[1]. Williams MM. *A Sanskrit-English dictionary*, Delhi, Motilal Banarasidass Publishers Private Limited, reprinted 1993.

Rasashastra bhaishajya kalpana
Ayurvedic pharmaceutical science related to metals, mineral and herbal/mineral medicines and dealing with various pharmaceutical processes (*shodhana*, *jarana*, *marana*, etc); detailed descriptions of metals and minerals, animal products and poisonous herbal medicines used therapeutically in Ayurveda.

Rasayana
Nourishment of the seven *dhatus;* promotive therapy; a medicine supposed to prevent the ageing process and prolong life

Rekhapurnatwa
A test for improperly processed metal. This test is performed to test the micro-fineness of *bhasma*.

Ritucharya avam ahara
Seasonal regimen and food

Samsarjana
Postoperative management

Samskara
Rites with scientific significance on reaching developmental milestones; refining; forming well

Satmya
Wholesome or agreeable; suitable for oneself

Satva
Mental strength

Shadrasa
Six tastes - sweet, sour, salty, bitter, pungent and astringent

Shalakya tantra
Science related to dentistry, ear, nose, throat, eye and other diseases of the organs of the supraclavicular region

Shalya tantra
Ayurvedic general surgery

Shamana
Palliative therapies; pacifying

Shat kriyakala
Six stages of pathogenesis

Shirodhara
Continuous pouring of medicated oil over the forehead

Shirolepa
Application of medicated paste on forehead

Shirovasti
A therapeutic procedure for the head

Shloka
Verse

Shodhana
Purification; in the context of Ayurveda medicines, does not denote only physical and chemical purification. The procedure implies the removal of harmful effects to the body.

Sneha varga
Edible fats and oils; unctuous group

Snehana
Lubrication, anointing, unction

Srotas
Channels

Svasthavritta
Personal and social hygiene; maintaining and promoting health

Svedana
Causing to perspire, diphoretic, sudorific or fomenting; steaming. The process involves steaming of the material wrapped in a muslin cloth forming a ball. The ball is then suspended in a specified liquid medium (milk, cow's urine, decoctions of medicinal plants etc.) in a container. The container is then heated. Care is taken to keep the material immersed in the liquid till the process is completed.

Tamra
Copper

Unmade
Inebriation; hysteria and psychosis; insanity

Urjaskara ahara
Energy-giving food

Urustambha
Stiffness in the thighs

Vajikarana
Promoting virility, aphrodisiac

Vamana
Therapeutic emesis

Varitaratwa
Test for improperly processed metal. This is one of the physical analytical parameters for *bhasma*, and is applied to study the lightness and fineness of prepared *bhasma*.

Vata
One of the three *doshas* governing the nervous system

Vatarakta
A disorder of *vata* and blood

Vatika
Tablet

Vaya
Age

Veerya/ virya
Temperamental potency; potency

Vidhi vaidyaka
Jurisprudence

Vikriti vigyana
Pathology

Virechana
Therapeutic purgation

Viruddha ahara
Incompatible food

Vyavahar ayurveda
Toxicology

Yukti
Rationale

Annex 2: WHO Consultation on Phytotherapy, Milan, Italy, 20–23 November 2006: list of participants

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Annex 3: Selected medicinal plants[1]

Ayurveda name of plant	Botanical name of plant
Adhaki	*Cajanus cajan* (Linn.) Mill sp.
Agaru	*Aquilaria agallocha* Roxb.
Agastya	*Sesbania grandiflora* (Linn.) Pers.
Agnimantha	*Premna integrifolia* Linn.
Ahiphena	*Papaver somniferum* Linn.
Ajagandha	*Gynandropsis gynandra* (Linn.)
Ajamoda	*Apium leptophyllum* (pers)
Akarakarabha	*Anacyclus pyrethrum* DC.
Aksoda	*Juglans regia* Linn.
Amalaki	*Emblica officinalis* Gaertn.
Amlavetasa	*Garcinia pedunculata* Roxb.
Amra	*Mangifera indica* Linn.
Apamarga	*Achyranthes aspera* Linn.
Aragvadha	*Cassia fistula* Linn.
Aralu	*Ailanthus excelsa* Roxb.
Arjuna	*Terminalia arjuna* W&A
Arka	*Calotropis procera* (Ait), R.Br.
Asana	*Pterocarpus marsupium* Roxb.
Asoka	*Saraca asoca* (Roxb) De.Wilde
Asthi samhari	*Cissus quadrangularis* Linn.
Asvagandha	*Withania somnifera* Dunal
Asvattha	*Ficus religiosa* Linn.
Atasi	*Linum usitatissimum* Linn.
Atibala	*Abutilon indicum* (Linn.) Sw.
Ativisha	*Aconitum heterophyllum* Wall.
Atmagupta	*Mucuna prurita* Hook.
Babbula	*Acacia arabica* Willd.
Bakuci	*Psoralea corylifolia* Linn.
Bakula	*Mimusops elengi* Linn.
Bala	*Sida cordifolia* Linn.
Bhallataka	*Semecarpus anacardium* Linn. f.
Bharangi	*Clerodendrum serratum* (Linn.) Moon.
Bhrngaraja	*Eclipta alba* Hassk.
Bhurja	*Betula utilis* D. Don
Bibhitaka	*Terminalia belerica* Roxb.
Bilva	*Aegle marmelos* Corr.
Bimbi	*Coccinia indica* W & A.
Bola	*Commiphora myrrha* (Nees) Engl.
Brahmi	*Bacopa monnieri* (Linn.) Pannel.
Brhati	*Solanum indicum* Linn.
Canaka	*Cicer arietinum* Linn.
Candrasura	*Lepidium sativum* Linn.
Cangeri	*Oxalis corniculata* Linn.
Cavya	*Piper chaba* Hunter
Cirabilba	*Holoptelea integrifolia* Planch.
Citraka	*Plumbago zeylanica* Linn.
Dadima	*Punica granatum* Linn.
Danti	*Baliospermum montanum* Muell-Arg.
Darbha	*Imperata cylindrica* Beauv.
Daruharidra	*Berberis aristata* D.C.
Devadaru	*Cedrus deodara* (Roxb.) loud
Dhanvayasa	*Fagonia cretica* Linn.
Dhanyaka	*Coriandrum sativum* Linn.
Dhataki	*Woodfordia fruticosa* Kurz.
Dhattura	*Datura metel* Linn
Dhava	*Anogeissus latifolia* Wall.
Draksa	*Vitis vinifera* Linn.
Dronapuspi	*Leucas cephalotes* Spreng.
Dugdhika	*Euphorbia prostrata* W.Ait
Durva	*Cynodon dactylon* Linn. Pers.
Eranda	*Ricinus communis* Linn.
Ervaru	*Luffa cylindrica*
Gambhari	*Gmelina arborea* Linn.
Goksura	*Tribulus terrestris* Linn.

[1] Adapted from: Sharma, PV. Charaka Samhita (English translation) Vol.I. Varanasi, India, Chaukhambha Orientalia, Varanasi, 1981.

Guduci	*Tinospora cordifolia* (Wild.) Miers.
Guggulu	*Commiphora wightii*
Gunja	*Abrus precatorius* Linn.
Haridra	*Curcuma longa* Linn.
Haritaki	*Terminalia chebula* Retz.
Hingu	*Ferula foetida* Regel
Iksu	*Saccharum officinarum* Linn.
Indravaruni	*Citrullus colocynthis* Schrad.
Isvari	*Aristolochia indica* Linn.
Jaipala	*Croton tiglium* Linn.
Jambu	*Syzygium cumini* (Linn.) Skeels
Jatamansi	*Nardostachys jatamansi* DC.
Jati	*Jasminum officinale* Linn. *var. grandiflorum* Bailey.
Jatiphala	*Myristica fragrans* Houtt.
Jivaka	*Microstylis muscifera* ridley.
Jivanti	*Leptadenia reticulata* W. & A.
Jyotismati	*Celastrus paniculatus* Willd.
Kadali	*Musa paradisiaca* Linn.
Kadamba	*Anthocephalus cadamba* Miq.A. Rich.
Kakamaci	*Solanum nigrum* Linn.
Kakoli	*Lilium polyphyllum* D. Don.
Kamala	*Nelumbo nucifera* Gaertn.
Kampilla	*Mallotus philippinensis* Muell Arg.
Kancanara	*Bauhinia variegata* Linn.
Kantakari	*Solanum xanthocarpum* Schrad &Wall
Kapittha	*Feronia limonia* (Linn.) Swingle.
Karamarda	*Carissa carandas* Linn.
Karanja	*Pongamia pinnata* (Linn.) Merr.
Karavellaka	*Momordica charantia* Linn.
Karcura	*Curcuma zedoaria* Ross.
Karkatasrngi	*Pistacia integerrima* Stew. Ex Brandis.
Karpasa	*Gossypium herbaceum* Linn.
Karpura	*Cinnamonum camphora* (Linn.) T. Nees & Eberm.
Kasa	*Saccharum spontaneum* Linn.
Katphala	*Myrica nagi* Thunb.
Katuka	*Picrorhiza kurroa* Royle ex Benth.
Khadira	*Acacia catechu* Willd.
Kiratatikta	*Swertia chirata* Buch. Ham.
Kokilaksha	*Asteracantha longifolia* Nees
Kosataki	*Luffa acutangula* (Linn.) Roxb. *Var. amara* C.B. Clarke
Krishna musli	*Curculigo orchioides* Gaertn.
Krishna jiraka	*Carum carvi* Linn.
Ksira kakoli	*Fritillaria roylei* Hook.
Ksira vidari	*Ipomoea digitata* Linn.
Kulattha	*Dolichos biflorus* Linn.
Kumari	*Aloe barbadensis* Mill.
Kumuda	*Nymphaea alba* Linn.
Kunkuma	*Crocus sativus* Linn.
Kusa	*Desmostachya bipinnata* Stapf.
Kusmanda	*Benincasa hispida* (Thunb.) cogn.
Kustha	*Saussuria lappa* CB. Clair
Kutaja	*Holarrhena antidysenterica* Wall.
Laghu dugdhika	*Euphorbia thymifolia* Linn.
Lajjalu	*Mimosa pudica* Linn.
Langali	*Gloriosa superba* Linn.
Lashuna	*Allium sativum* Linn.
Lata karanja	*Caesalpinia crista* Linn.
Latakasturi	*Hibiscus abelmoschus* Linn.
Lavanga	*Syzygium aromaticum* (Linn. Merr. & L.M. Perry.
Lodhra	*Symplocos racemosa* Roxb.
Madana	*Randia dumetorum* Lamk.
Madayantika	*Lawsonia inermis* Linn.
Madhavi	*Hiptage benghalensis* Kurz.
Madhuka	*Madhuca india* J.F. Gmel.
Madhusnuhi	*Smilax china* Linn.
Mahabala	*Sida rhombifolia* Linn.
Mahameda / meda	*Polygonatum cirrhifolium* Royle
Mahanimba	*Melia azedarach* Linn.
Mandukaparni	*Centella asiatica* (Linn.) Urban
Manjistha	*Rubia cordifolia* Linn.
Marica	*Piper nigrum Linn.*
Masa	*Phaseolus mungo* Linn.
Matulunga	*Citrus medica* Linn.
Mayaphala	*Quercus infectoria* Oliv.
Methi	*Trigonella foenum-graecum* Linn.
Misreya	*Foeniculum vulgare* Mill.
Mudga	*Phaseolus radiatus* Linn.
Mulaka	*Raphanus sativus* Linn.
Munditika	*Sphaeranthus indicus* Linn.
Musali	*Chlorophytum tuberosum* Baker.
Musta	*Cyperus rotundus* Linn.

Nagabala	*Sida veronicaefolia* Lam.
Nagakesara	*Mesua ferrea* Linn
Nagavalli	*Piper betle* Linn.
Narikela	*Cocos nucifera* Linn.
Nili	*Indigofera tinctoria* Linn.
Nimba	*Azadirachta indica* A. Juss.
Nimbu	*Citrus limon* (Linn.) Burm.f.
Nirgundi	*Vitex negundo* Linn.
Palasa	*Butea monosperma* (Lam. Kuntze.)
Paribhadra	*Erythrina indica* Lam.
Parpata	*Fumaria parviflora* Lam.
Pasanabheda	*Bergenia ligulata* (Wall.) Engl.
Patala	*Stereospermum suaveolens* DC.
Patha	*Cissampelos pareira* Linn.
Patola	*Trichosanthes dioica* Roxb.
Pattanga	*Caesalpinia sappan* Linn.
Phalgu	*Ficus hispida* Linn. f.
Pilu	*Salvadora persica* Linn.
Pippali	*Piper longum* Linn.
Plaksa	*Ficus lacor* Buch. Ham.
Prapunnada / cakramarda	*Cassia tora* Linn.
Prasarini	*Paederia foetida* Linn.
Priyala	*Buchanania lanzen* Spreng.
Priyangu	*Callicarpa macrophylla* Vahl.
Prsniparni	*Uraria picta* Desv.
Puga	*Areca catechu* Linn.
Puskara	*Inula racemosa* Hook. f.
Rakta candana	*Pterocarpus santalinus* Linn. f.
Rakta punarnava	*Boerhavia diffusa* Linn.
Rasna	*Pluchea lanceolata* Oliver & Hiern.
Riddhi	*Habenaria intermedia* D. Don
Rohitaka	*Tecomella undulata* (G. Don) Seem.
Rsabhaka	*Microstylis wallichii* Lindl.
Rudraksa	*Elaeocarpus ganitrus* Roxb.
Sahacara	*Barleria prionitis* Linn.
Sahadevi	*Vernonia cinerea* Lees.
Sakhotaka	*Strebulus asper* Lour.
Sala	*Shorea robusta* Gaertn. F.
Salaparni	*Desmodium gangeticum* DC.
Sali	*Oryza sativa* Linn.
Sallaki	*Boswellia serrata* Roxb.
Salmali	*Salmalia malabarica* Schott & Endl.
Sankhapuspi	*Convolvulus pluricaulis* Choisy
Saptaparna	*Alstonia scholaris* R.Br.
Sara	*Saccharum munja* Roxb.
Sarala	*Pinus roxburghii* Sargent
Sarsapa	*Brassica campestris* Linn. *Var. rapa* (Linn.) Hartm.
Satahva	*Anethus sowa* Kurz.
Satapatrika	*Rosa centifolia* Linn.
Satavari	*Asparagus racemosus* Willd.
Sati	*Hedychium spicatum* Ham. ex. Smith.
Sigru	*Moringa pterygosperma* Gaertn.
Simsapa	*Dalbergia sissoo* Roxb.
Sirisha	*Albizzia lebbeck* Benth.
Snuhi	*Euphorbia neriifolia* Linn.
Sthulaila	*Amomum subulatum* Roxb.
Suksmaila	*Elettaria cardamomum* Maton
Sunthi	*Zingiber officinale* Roscoe.
Surana	*Amorphophallus campanulatus* (Roxb.) BL.
Svarnaksiri	*Euphorbia thomsoniana* Boiss.
Svarnapatri	*Cassia angustifolia* Vahl.
Sveta arka	*Calotropis gigantea* (Linn.)R.Br. ex Ait
Sveta candana	*Santalum album* Linn.
Sveta jiraka	*Cuminum cyminum* Linn.
Sveta punarnava	*Boerhavia verticillata* Poir.
Sveta sariva	*Hemidesmus indicus* R.Br.
Syonaka	*Oroxylum indicum* Vnt.
Tagara	*Valeriana wallichii* DC.
Takkola (S.Y.)	*Illicium verum* Hook.f.
Talisa	*Abies webbiana* Lindl.
Tamalaki	*Phyllanthus niruri* Linn.
Tejapatra	*Cinnamomum tamala* Nees & Eberm.
Tejovati	*Zanthoxylum alatum* Roxb.
Tila	*Sesamum indicum* Linn.
Tinisa	*Ougeinia dalbergioides* Benth.
Trapusa	*Cucumis sativus* Linn.
Trayamana	*Gentiana kurroo* Royle.
Trivrt	*Ipomoea turpethum* R.Br.
Tulasi	*Ocimum sanctum* Linn.
Tumbini	*Lagenaria siceraria* (Mol.) Standl.
Turuska	*Liquidambar orientalis* Miller.
Tuvaraka	*Hydnocarpus laurifolia* (Dennst.) Sleumer
Tvak	*Cinnamomum zeylanicum* Blume
Udumbara	*Ficus racemosa* Linn.

Usira	*Vetiveria zizanioides* (Linn.) Nash
Utpala	*Nymphaea stellata* Willd.
Vacha	*Acorus calamus* Linn.
Vamsa	*Bambusa bambos* Druce.
Vanyajiraka	*Centratherum anthelminticum* (Willd.) Kuntze
Varahi	*Dioscorea bulbifera* Linn.
Varuna	*Crataeva nurvala* Buch ham.
Vasa	*Adhatoda vasica* Nees.
Vata	*Ficus bengalensis* Linn.
Vatsanabha	*Aconitum ferox* Wall.ex. Royle
Vidanga	*Embelia ribes* Burm.f.
Vidari	*Pueraria tuberosa* DC.
Vijaya	*Cannabis sativa* Linn.
Visamusti	*Strychnos nux-vomica*
Vrddhadaru	*Argyreia speciosa* Sweet.
Vriddhi	*Habenaria sp.*
Vrksamla	*Garcinia indica* Choisy.
Yasti	*Glycyrrhiza glabra* Linn.
Yava	*Hordeum vulgare* Linn.
Yavani	*Trachyspermum ammi* (Linn) Sprague