

# Unani Medicine

**The Science of Health & Healing**

*An Overview*



**CENTRAL COUNCIL FOR RESEARCH IN UNANI MEDICINE**

Ministry of AYUSH, Government of India



## Unani Medicine: The Science of Health & Healing – *An Overview*

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## Preface

**U**nani Medicine (*Tıbb*) is a medical system that provides comprehensive solution for various states of human body. It is the only global system that has evolved in different parts of the world by imbibing observations and experiments of many civilizations. Originating from the ancient Egypt and Mesopotamia, it was further enriched by the Greeks, Arabs and Persians.

After getting introduced to India in eighth century, Unani Medicine was further developed by physicians and scholars of India through their remarkable contributions to take it to the present shape of a fully developed science. As soon as the country got independence, concerns to preserve and promote the national heritage were addressed and the promotion and propagation of traditional systems of medicine, including Unani Medicine, were taken as a mandate. With the increasing government of India support, these systems are flourishing in the areas of education, research, health care delivery and production of health products and medicines.

Systemic scientific research in Unani Medicine largely started with the establishment of the Central Council for Research in Indian Medicine and Homoeopathy in 1969. In March 1978, the Central Council for Research in Unani Medicine was set up. Over the years, the CCRUM has emerged as the leading government organization of scientific research in Unani Medicine. The areas of research include drug standardization, preclinical and clinical research, survey and cultivation of medicinal plants and literary research. The council has won appreciation from various quarters for the research endeavours and the efforts it made in promoting and propagating Unani Medicine at national as well as international level.

The Government of India has the mandate of promoting AYUSH systems that include Unani Medicine. Initiatives to include AYUSH systems in the national healthcare delivery system have been taken by the government. Unani Medicine has also been integrated with National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS). The council has also been a part of the *Swasthya Rakshan Programme* that aims on reducing disease burden in rural population. Keeping pace with 'Digital

India' campaign, the Ministry of AYUSH conceptualized 'AYUSH GRID' project for digitizing AYUSH healthcare delivery at all levels. The National AYUSH Morbidity and Standardized Terminologies Electronic Portal (NAMSTE - Portal) is a pioneer component of AYUSH GRID that facilitates the development of comprehensive web portal on AYUSH morbidity codes. The AYUSH Hospital Management Information System (A-HMIS) is another initiative to effectively manage all the functions of health care delivery systems and patient care in AYUSH establishments.

The CCRUM has collaborations with scientific institutions of repute to work together for the furtherance of Unani Medicine. MoUs with Jamia Millia Islamia, New Delhi; Jamia Hamdard, New Delhi; National Institute for Pharmaceutical Education and Research, Hyderabad; Amity University, Noida; National Research Development Corporation, New Delhi; Invest India for AGNI – Accelerating Growth of New India's Innovations, New Delhi, etc. have been signed. Besides, research studies are conducted in collaboration with All India Institute of Medical Sciences, New Delhi, Aligarh Muslim University, Aligarh, ICMR's National Institute of Cancer Prevention and Research, Noida and National Institute for Research in Tuberculosis, Chennai, Vallabh Bhai Patel Chest Institute, New Delhi, Amity Institute of Pharmacy, Noida, etc. The CCRUM has recently signed international MoUs with Hamdard University, Bangladesh for setting up a Unani Chair at the university and Avicenna Tajik State Medical University (ATSMU), Tajikistan for cooperation in the areas of mutual interest. The CCRUM, under the guidance of the Ministry of AYUSH, is also engaged in fruitful dialogues with countries like Iran, China, USA, UK, Israel and Sri Lanka for exploring areas of mutual interests in the field of Unani Medicine.

This document provides an overview of Unani Medicine with details on its origin, fundamentals, education, research & development and its status in India and at international level. The document is being brought out with the hope that it shall be useful in spreading the rich and age-old knowledge of Unani Medicine for health benefits among the masses across the globe.

A handwritten signature in blue ink, appearing to read 'Asim', is positioned above the name of the Director General.

**Prof. Asim Ali Khan**  
Director General

Central Council for Research in Unani Medicine  
Ministry of AYUSH, Government of India

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## Abbreviations

A-HMIS	AYUSH Hospital Management Information System
ASU	Ayurveda, Siddha and Unani
ASUDTAB	Ayurveda, Siddha, Unani Drugs Technical Advisory Board
ATSMU	Avicenna Tajik State Medical University
AWC	AYUSH Wellness Clinic
AYUSH	Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
BUMS	Bachelor of Unani Medicine & Surgery
CCIM	Central Council of Indian Medicine
CCRIMH	Central Council for Research in Indian Medicine and Homoeopathy
CCRUM	Central Council for Research in Unani Medicine
CHC	Community Health Centre
CRIUM	Central Research Institute of Unani Medicine
CRU	Clinical Research Unit
CSIR	Council of Scientific and Industrial Research
DOTS	Directly Observed Treatment, Short-course
DSRI	Drug Standardization Research Institute
DSRU	Drug Standardization Research Unit
DST	Department of Science and Technology
EDL	Essential Drugs List
EHR	Electronic Health Record
EMR	Extramural Research
GMP	Good Manufacturing Practice
GOPD	General Out-patient Department
HAKILHRUM	Hakim Ajmal Khan Institute for Literary & Historical Research in Unani Medicine
HJUM	Hippocratic Journal of Unani Medicine
ICD	International Classification of Diseases
IEC	Information, Education and Communication
IMCC	Indian Medicine Central Council
IMPCL	Indian Medicines Pharmaceutical Corporation Limited
IMR	Intramural Research
IPC	International Patent Classification

IPO	Indian Patent Office
ISO	International Organization for Standardization
IT	Information Technology
MCH	Maternal and Child Health
MD	Doctor of Medicine
MoU	Memorandum of Understanding
MS	Master of Surgery
NABH	National Accreditation Board for Hospitals & Healthcare Providers
NABL	National Accreditation Board for Testing and Calibration Laboratories
NAMSTE- Portal	National AYUSH Morbidity and Standardized Terminologies Electronic Portal
NISCAIR	National Institute of Science Communication and Information Resources
NIUM	National Institute of Unani Medicine
NMPB	National Medicinal Plants Board
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
NRHM	National Rural Health Mission
NRIUMSD	National Research Institute of Unani Medicine for Skin Disorders
OPD	Outpatient Department
PCA	Project Collaboration Agreement
PCIM&H	Pharmacopoeia Commission for Indian Medicine & Homeopathy
PHC	Primary Health Centre
PLIM	Pharmacopoeial Laboratory for Indian Medicine
QCI	Quality Council of India
RCH	Reproductive and Child Health
RCT	Randomized Controlled Trial
RRC	Regional Research Centre
RRIUM	Regional Research Institute of Unani Medicine
SCAR	Sequence Characterized Amplified Region
SCSP	Scheduled Caste Sub-Plan
SOP	Standard Operating Procedure
SRP	<i>Swasthya Rakshan</i> Programme
T&CM	Traditional and Complementary Medicine
TCAM	Traditional Complementary and Alternative Medicine
TKDL	Traditional Knowledge Digital Library
TKRC	Traditional Knowledge Resource Classification
TSP	Tribal Sub-Plan
UPC	Unani Pharmacopoeia Committee
WHO	World Health Organization

## Transliteration Table

The following Arabic letters have been transliterated with diacritical marks as mentioned against each:

ا	a	ر	r	ف	f
ب	b	ز	z	ق	q
ت	t	س	s	ك	k
ث	th	ش	sh	ل	l
ج	j	ص	ṣ	م	m
ح	ḥ	ض	ḍ	ن	n
خ	kh	ط	ṭ	ه	h
د	d	ظ	ẓ	ي	y
ذ	dh	غ	gh		

The following Persian letters have been transliterated with diacritical marks as expressed against each:

پ	p	گ	g	ٹھ	<u>th</u>
ٹ	<u>t</u>	ن	<u>n</u>	چھ	<u>ch</u>
چ	<u>ch</u>	بھ	<u>bh</u>	دھ	<u>dh</u>
ڈ	<u>d</u>	پھ	<u>ph</u>	کھ	<u>kh</u>
ڑ	r	تھ	<u>th</u>	گھ	<u>gh</u>

- $\dot{w}$  has been transliterated with elevated coma (´) if used in the mid or end of word followed by relevant vowel and this elevated coma is not expressed at the beginning and only related vowel has been used directly.
- Letter  $\dot{u}$  is transliterated as elevated inverted coma (ˆ).
- Letter  $\dot{v}$  as Arabic letter is transliterated as *w* and as Persian/Urdu letter is transliterated as *v*.
- $\dot{d}$  and  $\dot{d}$  are not expressed in both pause and construct forms.
- Article  $\dot{a}$  is transliterated as *al-* (*ʾl-* in construct form) whether followed by a moon or a sun letter.
- $\dot{w}$  as a Persian/Urdu conjunction is transliterated as ( *o* ) and as an Arabic conjunction is transliterated as *wa-*.
- Short vowel ( *-* ) in Persian/Urdu passive or in conjunction form is transliterated as (*-i*).
- Double letters have been expressed as following:  
 $\dot{w}$  = *uww*  
 $\dot{u}$  = *iy*
- Short & long vowels and diphthongs are used in the following form:

Short vowels	Long vowels	Diphthongs
$\dot{a}$ = <i>a</i>	$\dot{a}$ = <i>ā</i>	$\dot{a}$ = <i>aw</i>
$\dot{i}$ = <i>i</i>	$\dot{i}$ = <i>ī</i>	$\dot{a}$ = <i>ay</i>
$\dot{u}$ = <i>u</i>	$\dot{u}$ = <i>ū</i>	
	$\dot{u}$ = <i>ī</i>	

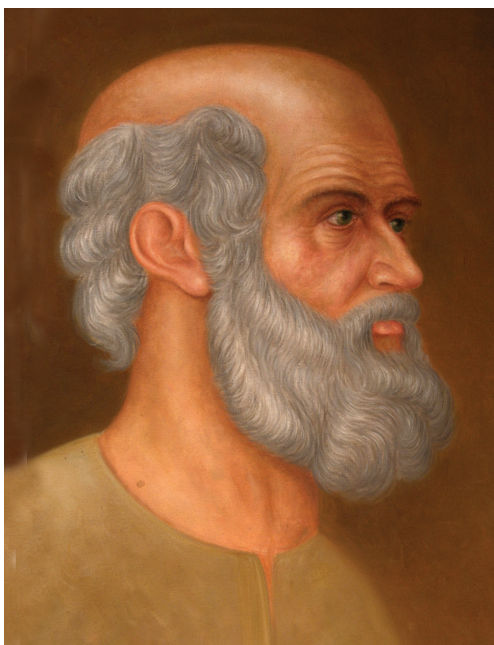
## Introduction

Unani Medicine (*Tibb*) is a medical system that deals with the management of health and disease. It provides promotive, preventive, curative and rehabilitative healthcare with holistic approach. The fundamental framework of this system is based on deep philosophical insights and scientific principles. It is holistic in nature and takes into account the whole personality rather than taking a reductionist approach towards the disease.

Unani Medicine offers treatment for diseases related to all the systems and organs of the human body. The treatment for chronic ailments, skin disorders, diseases of liver, musculo-skeletal and reproductive systems, and immunological and lifestyle disorders has been found to be highly effective and acceptable. The use of exhilarants, aphrodisiacs, organ-specific tonics, immune-modulatory drugs, temperament specific drugs, concoctives and purgatives, correctives for adverse effects, etc. is unique feature of this system of medicine. Cosmoceutics, nutraceuticals, aromatics and corresponding therapies are also important parts of treatment.

### Evolution of Unani Medicine

The history of Unani Medicine is traced back to ancient Egypt and Babylon. Egyptians used to take medicinal plants as remedy for ailments. They had also initiated surgery as a method of treatment. The studies of Papyri clearly show the ability of the Egyptians in the field of medicine. Imhotep (2800 BC) and Amenhotep (1550 BC) were some noted physicians of the ancient Egypt. Due to their great contributions, the Babylonians also occupied an important place in the history of Unani Medicine. During the Asclepian period (1200 BC), the Greeks developed the art of medicine in the light of medical knowledge of the Egyptians and the Babylonians. Hippocrates (460–370 BC), the father of medicine, was the dominating figure of the classical period of the Greek



Portrait of Hippocrates (460-370 BC)



Portrait of Galen (129-200 AD)

medical history. By investigating the natural causes of disease and recording the existing knowledge, he set the ground for medicine to develop as a science. Galen (129-200 AD), a Roman scholar, made a valuable addition to *Ṭibb* by conducting experiments and thus elevated it from the status of an art to the rank of a scientific discipline.

After the Greek and Roman periods, the manifestation of *Ṭibb* in the Arab lands led to its greater growth as the Arab physicians not only adopted the existing knowledge but also contributed through their valuable observations and interventions in the field. Due to their additions, *Ṭibb* was contemporized and made in sync with the need of the time. In the medieval period, the caravan of *Ṭibb* went far and wide, going beyond the Arab region, covering Persia, Spain, Northern Africa, Turkey, Central Asia, Indian Subcontinent and China. The physicians of all these nations and regions contributed to the growth of this science. Persia holds the merit of having famous genius physicians like *Rabban Ṭabarī* (838-870 AD), *Rāzī* (865-925 AD), *‘Alī ibn ‘Abbās Majūsī* (d. 994 AD), *Abū Sahl Masīhī* (d. 1010 AD) and *Ismā‘īl Jurjānī* (1040-1136 AD) who continued to influence the medical world for a very long time. *Ibn Sīnā* (980-1037 AD) who was born in Afshona, Uzbekistan and died in Hamedan, Iran, ruled the medical



Portrait of Rāzī (865-925 AD)



Portrait of Ibn Sīnā (980-1037 AD)

world with his great writings. *Abu'l Qāsim Zahrāwī* (963-1013 AD), *Ibn Rushd* (d. 1198), *Ibn Baytār* (1197-1248 AD) and *Ibn Nafīs* (1213-1288 AD) contributed novel and innovative works in their respective fields. The world of *Ṭibb*, free from the limitations of languages and boundaries, kept on witnessing artistic and scientific growth with new theories and ideas.

Unani Medicine was introduced in India during the eighth century AD and soon got rooted in the country as an indigenous system of medicine due to its wide acceptance among the masses and patronage of governments of the time. During its history of over 1200 years in India, Unani Medicine made major advancements to get leadership at the global level and successfully applied its principles to the Indian geo-human environment, to emerge as one of the effective and commonly used systems of medicine. During the medieval period, the advancements in medicine and development of high standards of education and practice in India attracted a number of students and scholars from Persia, Afghanistan and Central Asia. Numerous mind-boggling examples of treatment and cure were witnessed and monumental works were developed. While some Indian scholars like *Yūsuf Harwī* (d. 1542 AD), *‘Alī Gīlānī* (d. 1668 AD), *Akbar Arzānī* (d. 1721 AD), *‘Alwī Khān* (d. 1749 AD) and *Sharīf Khān* (d. 1807 AD) promoted *Ṭibb*, some



Portrait of *Hakīm Akbar Arzānī* (d. 1721 AD)



Portrait of *Hakīm Muhammad Ajmal Khān*  
(1868-1927 AD)

others such as *A'zam Khān* (1813-1902 AD), *'Abdul 'Azīz* (1854-1911 AD) and *Ajmal Khān* (1868-1927 AD) made efforts to address the scientific, pedagogical and research needs of the system in their times. The *Sharīfī* family of Delhi, the *'Azīzī* family of Lucknow and the *Nizām* of Hyderabad played a significant role in the development of Unani Medicine during the nineteenth century and early twentieth century. In Independent India, *Hakīm 'Abdu'l Ḥamīd* (1908-1999 AD) is the foremost among the leading personalities who made great contributions to the development of the system. Due to his tremendous contributions to the establishment of clinics, providing Unani treatment, education, research as well as pharmaceuticals, *Hakīm 'Abdu'l Ḥamīd* is considered to have championed the cause of Unani Medicine. *Hakīm Muḥammad*



*Hakīm 'Abd al-Ḥamīd* (1908-1999 AD)

*Kabīruddīn* (1894-1976 AD) is the most reliable Unani scholar known for his major contributions in the translation of classical Unani works into Urdu language as well as correlation of the philosophy of Unani Medicine with the concepts of modern sciences. Due to contributions of the latter scholars, governments and other stakeholders, the system kept progressing and is poised to flourish with greater pace in the new millennium.

## Theoretical Framework of Unani Medicine

The principles of Unani Medicine cover all medical fields, e.g. anatomy, physiology, pathology, diagnostics, preventive medicine, pharmacology and therapeutics. The factors of existence (*Umūr Ṭabī'yya*) that make up the totality of a human being are elements (*Arkān*), humours (*Akhlāt*), temperaments (*Mizāj*), organs (*A'dhā'*), pneumas (*Arwāḥ*), faculties (*Quwā*) and functions (*Af'āl*).

The imbalance in the temperaments and humours and disorganization and discontinuity of the structure lead to the development of the disease. Unani Medicine uses macroscopic parameters including clinical history, physical examination, pulse examination and inspection of excreta to diagnose the disease. The concept of treatment is based upon the removal of the causative factor (*Izāla-i-Sabab*), evacuation of morbid material (*Tanqīya*) and normalization of the morbid temperament (*Ta'dīl-i-Mizāj*). This is achieved as per the principles of heterotherapy (*Ilāj bi'l- Didd*) using diets and drugs of opposite temperaments. Non-drug regimens like cupping, leeching, bath, massage, surgery and psychiatric treatment are also used.

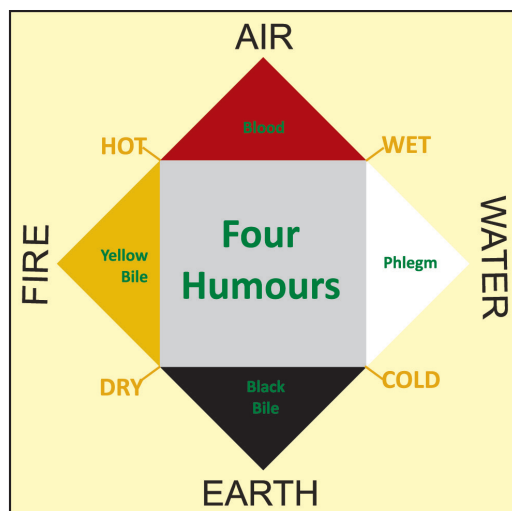
## Basic Principles

The most important principle of Unani Medicine is temperament (*Mizāj*) which classifies human beings, diets, drugs, etc. into four qualitative types: hot and dry, hot and wet, cold and wet, and cold and dry. Different characters are found in people having different temperaments. For instance, a hot and dry temperament is associated with a lean built, excessive anger, etc. The temperament of diet, drug, etc. is known by some physical characters and effects on human beings, for example, a non-succulent, pungent or salty vegetable is likely to be hot and dry. This facilitates identification of proper diet for maintaining the healthy

temperament of a human being. The pathological shift in the temperament causes disease, which is cured by reversing the abnormal temperament to the normal using drugs and diets of opposite temperament.

The four humours (*Akhlāt*), i.e. blood (*Dam*), phlegm (*Balgham*), yellow bile (*Şafrā'*) and black bile (*Sawdā'*) are the liquid fundamental substances of living things possessing ability to support the biological processes, i.e. life, nutrition, growth, sensation, movement and reproduction. Human

temperament is commonly denoted by the dominant humour i.e. sanguineous (*Damwī*), phlegmatic (*Balghamī*), choleric (*Şafrāwī*) and melancholic (*Sawdāwī*), which can be correlated with the temperaments of diets, drugs, environmental factors, etc. Any disturbance in the equilibrium of humours causes disease, hence the treatment aims at restoring the equilibrium by administering various interventions (including drugs) of the opposite temperament. Besides, Unani Medicine believes that medicatrix naturae (*Ṭabī'at*) is the supreme power, which controls all the physiological functions of the body and provides resistance against the disease.



Schematic diagram of Humours (*Akhlāt*)

## Principles of Diagnosis and Treatment

Consonant with its holistic approach of health and disease, Unani Medicine mostly uses macroscopic and subjective parameters for diagnosis. Since its holism also takes into account the subtle level of man, it also uses certain other parameters, such as dreams and intuition. However, its diagnostic system is very comprehensive and accurate, and succeeds in diagnosing the disease in a reproducible manner. It also has the conceptual framework to use modern medical diagnostic means in cases where they are useful. The unique holistic diagnostics of Unani Medicine comprises history, physical examination, pulse examination and inspection of excreta.

## History Taking and Physical Examination (*Rūdād-o-Mu‘āyana*)

History taking and physical examination are undertaken according to general as well as specific parameters required by the particular problem of the patient in the light of ‘Ten fundamental categories’ (*Ajnās ‘Ashara*).

### Pulse (*Nabd*)

Pulse is rhythmic expansion and relaxation of the arteries produced by the systolic and diastolic movement of the heart. It is primarily observed in the light of ten parameters, viz. size, strength, speed, consistency (elasticity), fullness, temperature, rate, frequency (constancy), regularity and rhythm. Some other types of compound pulses have also been described. Further, the specific type of pulse in each disease is also described in accordance with the general parameters. Unani physicians try to judge the nature of the functional disturbance of the human system empirically by pulse examination of a patient. This judgment is based on the experience of the individual physician.

Unani scholars have described pulse under several headings such as normal pulse, factors governing the pulse, effects of patient factors such as age, sex, temperament, pregnancy, emotions, food and drink, sleep and wakefulness, exercise, bath, various disease conditions and season, region and other factors inimical to the body.

### Physical Examination of Urine

Physical examination of urine helps a lot in the diagnosis, not only of urogenital diseases but also of other systemic disorders. The following aspects are taken into account:

- Quantity (*Miqdār*)
- Colour (*Lawn*)
- Odour (*Rā’iḥa*)
- Consistency (*Qiwām*)
- Foam or Froth (*Zubda*)
- Clearness and Turbidity (*Ṣafā-wa-Kudūrat*)
- Sediments (*Rasūb*)

## Physical Examination of Stool

Physical examination of stool also helps in the diagnosis of various diseases. The colour, quantity, consistency and the presence of foreign bodies are observed during stool examination.

## Principles of Treatment (*Uṣūl-i-‘Ilāj*)

In Unani Medicine, disease management depends upon the following principles considering the pathology involved in disease process.

**Removal of causative factor (*Izāla-i-Sabab*):** The causative factor in the pathology of the disease process is determined and removed as the first step of disease management.

**Normalization of morbid temperament (*Ta’dīl-i-Mizāj*):** The diseases in which the temperament of a person is altered without affecting the quality and quantity of Humours require correction of simple morbid temperament only. It is achieved by lifestyle modification considering essential and non-essential factors.

**Evacuation of morbid material (*Tanqiya*):** If the temperament is changed due to the increase in the quantity and volume of certain Humours resulting in accumulation of morbid material in the body, it is corrected by evacuating that material through various therapies like venesection, concoctive-purgative therapy, expectoration, diuresis and diaphoresis.

**Heterotherapy (*‘Ilāj bi’l-Didd*):** This is the main and commonly employed principle of treatment in Unani Medicine (*Ṭibb*), which suggests that the drug having the opposite temperament to that of the disease is administered for the correction of morbid temperament and cure of the illness.

**Holistic approach:** In the management of systemic diseases, the entire being of the patient are taken into account. Habit and habitat, physical, emotional, temperamental and humoural state of the patient, and the condition of affected system/organ are also given due importance in diagnosing diseases and prescribing the most suitable treatment.

**Surgical and parasurgical procedures (*‘Ilāj bi’l-Yad*):** The diseases of the structure (*Sū’-i-Tarkīb*) and those involving the breach of continuity (*Tafarruq-i-Ittiṣāl*) are treated by using suitable operative and para-operative techniques.

Unani literature has a vivid description of the instruments and procedures of operation for the management of different surgical problems.

**Psychiatric treatment ('Ilāj Nafsānī):** Unani Medicine treats psychiatric diseases by using drugs, modifying mind-related processes like sleep and applying psychotherapy.

**Spiritual treatment ('Ilāj Rūḥānī):** Unani Medicine recognizes the role of spirituality in health and disease and therefore offers spiritual treatment for some of the diseases. The spirit is articulated to the pneuma and through it to the body and is considered the supreme regulator of human being. It, therefore, has a significant role in maintaining health and managing diseases. However, the system restricts itself to the pneuma and body, and leaves spiritual treatment and counselling to spiritual healers.

## Promotive and Preventive Healthcare

Unani Medicine lays emphasis on maintaining health in a positive and individualized manner with different guidelines in respect of different temperaments, genders, age groups, geographical regions, seasons, occupations, etc. Some of the commonly used guidelines are regimens for seasons (*Tadābīr-i-Mavsam*), regimens for age groups (*Tadābīr-i-Asnān*), regimens for pregnancy (*Tadābīr-i-Ḥaml*) and regimens for travelers (*Tadābīr-i-Musāfir*). The stage of treatment comes only after promotive and preventive guidelines. The temperament is the most important principle in adopting measures for promotion of health and prevention of disease as in case of treatment.

Unani Medicine divides health into three states, viz. stable optimum health, vulnerable optimum health, and debility without disease, for advocating the most suitable guidelines for maintenance and promotion of health. The first state is maintained by minutely described healthy lifestyle - physical and psychic - and healthy environment and diet specially tailored according to the temperament of an individual. The second and third states additionally require special diets, regimens (massage, exercise, etc.) and even drugs.

## Six Essential Factors

To maintain health, Unani Medicine emphasizes maintenance of the six essential factors (*Asbāb Sitta Ḍarūriyya*). These factors are air, foods and drinks, bodily

movement and repose, psychic movement and repose, sleep and wakefulness, and evacuation and retention. The lifestyle disorders, e.g. obesity, hypertension, diabetes, coronary heart disease, depression, which are the major health burden of present time, can be managed successfully by following the instructions with regard to these factors.

The role of the six essential factors is not crucial in only maintaining health and preventing diseases, but also in the treatment. Ignoring the principles of these factors results into disease, and abiding by them through dietotherapy, regimenal therapy and pharmacotherapy helps restore the health.

### **Air (*Hawā'*)**

Air is the most crucial factor that affects the quality of life and health in terms of its composition and properties. Unani Medicine gives due importance to seasonal variations in air for prevention and treatment. For instance, air becomes hotter in summer; hence, cold foods and moderate movement and exercise are recommended to remain healthy.

### **Foods and Drinks (*Ma'kūl-o-Mashrūb*)**

Unani Medicine makes extensive use of diet both for the promotion of health and treatment of the disease. The principle of temperament is applied in identifying the appropriate foods for an individual; healthy or diseased. A healthy person should take foods having the temperament similar to his temperament. However, if he is threatened with a pathological shift in his temperament, he should use foods of the opposite temperament.

Unani Medicine brackets drinks with foods, because fluids are often recommended due to their healing and nutritious properties in an individual. Also, it is worthy to note that water, which is the main drink, is crucial for digestion and metabolism of food. Extensive guidelines for quality and quantity of water and appropriate time for drinking have been prescribed. For instance, individuals of hot temperament are advised to drink water during meals, while those with cold temperament are advised to avoid during and just after meals.

### **Bodily Movement and Repose (*Ḥarakat-o-Sukūn Badanī*)**

Unani Medicine gives great importance to appropriate bodily movement and

repose (*Harakat-o-Sukūn Badanī*) for maintaining health and treating the disease. Movement is necessary for evacuating waste products, while repose for retaining nutrients till the completion of digestion. The system offers a wide range of exercises for whole body and individual organs. It even considers massage (*Dalk*), Turkish bath (*Hammām*), slow horse riding and swinging (*Urjūḥa*) as moderate exercises, and prescribes the last one for paralytic people.

### Psychic Movement and Repose (*Harakat-o-Sukūn Nafsānī*)

Different mental states depend on the movement and repose of pneuma (*Harakat-o-Sukūn Nafsānī*). Its movement increases heat while repose increases cold. Excessive movement or repose of pneuma causes hot and cold pathologies. Any abnormal movement or repose of pneuma resulting in pathologies can be managed by altering the mental states and administering drugs of the opposite temperament. This is the basis of the unique and successful psychopharmacological management of psychiatric and psychosomatic diseases in Unani Medicine.

### Sleep and Wakefulness (*Nawm-o-Yaqza*)

Sleep is necessary for preserving pneuma and vitality and providing replacement of wear and tear (*Badl Mā Yataḥallal*), while wakefulness is necessary for voluntary functions. Since they resemble repose and movement respectively, excess of sleep increases coldness and wetness, while excess of wakefulness increases hotness and dryness. Therefore, moderation, as per the temperaments, is advised with regard to this factor.

### Evacuation and Retention (*Istifrāgh-o-Iḥtibās*)

Evacuation is needed for the removal of waste products, which may cause obstructions or embolism and toxicity. Retention of essential dietary constituents is needed not only for full digestion and metabolism but also to maintain reserves of nutrients and essential substances. Besides maintaining health, the evacuation has a role in the treatment of diseases wherein the temperament is changed due to the accumulation of morbid material in the body. In such conditions, the disease causing material is evacuated by various therapies, e.g. concoctive-purgative therapy, venesection, diuresis, diaphoresis and expectoration.

## Lifestyle Management

Unani Medicine lays great emphasis on lifestyle management for promotion of health and prevention and treatment of diseases. It integrates the components of external environment like seasons, air, food and drinks with those of internal environment, i.e. movement and rest, sleep and wakefulness, evacuation and retention, etc. regulating the bodily as well as psychic and mental states. Further, these external and internal factors are correlated with temperament to individualize the appropriate quality and quantity of diet, bodily movement, mental activity, etc. in accordance with age, gender, season, etc. Since these factors too possess specific temperaments, changes in one factor can be moderated by using certain measures accordingly, e.g. the effect of season or psychic state can be moderated by diet, drugs, clothing, exercise, massage, bathing, etc. Unani Medicine also provides multi-factorial guidelines to maintain health through factors of corresponding temperament in health and that of opposite temperament in disease.

On account of its ability to undertake health promotion and disease prevention by lifestyle interventions, Unani Medicine is of great relevance to the present-day healthcare.

## Therapeutic Approaches

Treatment in Unani Medicine is mainly based upon heterotherapy (*'Ilāj bi'l-Didd*). Disease, which is caused by the emergence of abnormality in temperament, is treated through drugs and non-drug interventions of the opposite temperament. Unani Medicine uses non-drug lifestyle interventions frequently and extensively, on the basis of the correlation of temperaments of environmental and host factors. Unani Medicine describes dietotherapy (*'Ilāj bi'l-Ghidhā*), regimenal therapy (*'Ilāj bi'l-Tadbīr*), pharmacotherapy (*'Ilāj bi'l-Dawā*) and surgery (*'Ilāj bi'l-Yad*) as modes of treatment. However, preference is given to dietotherapy and regimenal therapy, whereas pharmacotherapy and surgery are used as second line treatment, if required.

## Dietotherapy (*'Ilāj bi'l-Ghidhā*)

Unani Medicine advocates administration or restriction of specific diets and regulation of the quality and quantity of foods for treating certain ailments.

There is a unique concept of food medicine (*Dawā' Ghidhā'i*) and medicinal food (*Ghidhā' Dawā'i*) in this medical system. The substances that are used primarily for their medicinal properties but also have nutritional value are called food medicine (*Dawā' Ghidhā'i*), e.g. almond and fig. These food items not only treat a disease but also provide nourishment. The substances that are used primarily as food but also have some medicinal properties are known as medicinal food (*Ghidhā' Dawā'i*), e.g. egg and Bengal gram. They have the advantage of being safe and nutritious. In addition, various food items have specific pharmacological actions, e.g. laxative, diuretic and diaphoretic.

### Regimenal Therapy (*'Ilāj bi'l-Tadbīr*)

Regimenal therapy (*'Ilāj bi'l-Tadbīr*) is one of the most popular methods of treatment practised by Unani physicians since antiquity. In the literature of *Ṭibb*, various regimens have been described for disease management either independently or in combination with other therapies. It includes lifestyle modification, physical exercise and measures to eliminate morbid humours (*Tanqīya*) from the body or to divert them (*Imāla*) by cupping (*Hijāma*), leeching (*Ta'līq al-'Alaq*), venesection (*Faṣd*), purgation (*Ishāl*), emesis (*Qay'*), diuresis (*Idrār-i-Bawl*), diaphoresis (*Ta'riq*), physical exercise (*Riyādat*), massage (*Dalk*), Turkish bath (*Ḥammām*), cauterization (*Kaiyy*) and concoctive-purgative (*Mundij-o-Mushil*) therapy. Expectoration (*Tanfīth*), counter irritation (*Īlām*), enema (*Ḥuqna*), Sitz bath (*Ābzan*), irrigation (*Naṭūl*) and fomentation (*Takmīd*) are some other regimens used for the same purpose.

#### Cupping (*Hijāma*)

Cupping (*Hijāma*) is a technique in which a cup is applied over the surface of skin by creating vacuum. Sometimes, it is performed by scarification at the site of cupping to draw blood and sometimes without scarification. The former is called wet cupping (*Hijāma bi'l-Shart*) and the latter dry cupping (*Hijāma bilā Shart*). Cupping is performed



Dry cupping (*Hijāmat bilā Shart*)

for promotive, preventive and therapeutic purposes, such as elimination or diversion of morbid material, enhancement of blood supply and correction of cold temperament or rectification of the temperament of a particular organ. Antispasmodic and detoxifying effects are also achieved through this technique.

### Leeching (*Ta'liq*)

Leeching (*Ta'liq*) is a method for elimination of morbid material. In this method, medicinal leeches are applied on the affected part to suck blood from deeper tissues. During this process, leeches also infuse their saliva into blood, which is a complex mixture of different biologically and pharmacologically active substances.

### Venesection (*Faşd*)

Venesection (*Faşd*) is a procedure in which an incision is given to the superficial veins and blood is allowed to flow. The objectives are removal of excess humours and waste material from the body, prevention of accumulation of waste material in blood, stimulation of metabolic processes and correction of altered temperament.

### Purgation (*Ishāl*)

Purgation (*Ishāl*) is a method of elimination of waste and morbid material from the body through rectum. During this process, the frequency of stool is increased by decreasing the absorption of water in the intestines or increasing the peristaltic movement or both. It is mainly employed for relieving severe constipation and evacuating morbid humours.

### Emesis (*Qay'*)

Emesis (*Qay'*) is evacuation of gastric contents through mouth. Its main objective is to eliminate toxic / morbid material from the upper gastro-intestinal tract. It is employed to manage gastro-intestinal diseases, headache, migraine, melancholia, etc.

### Diuresis (*Idrār-i-Bawl*)

Diuresis (*Idrār-i-Bawl*) is a process in which formation and excretion of urine is increased for the management of certain ailments. It is an important

process adopted for evacuation of morbid material from the body through urine. Management of diseases of heart, kidney and liver is one of the primary objectives of diuresis.

### **Diaphoresis (*Ta'riq*)**

Diaphoresis (*Ta'riq*) is a process of induced sweating. It is instrumental in liquefying the sticky and adherent humours lodged in the peripheral tissues. Diaphoresis is employed to excrete waste material from skin, reduce excessive heat, divert morbid material from kidney to skin, purify blood, improve dermal nutrition and improve skin texture.

### **Physical Exercise (*Riyādat*)**

Physical exercise (*Riyādat*) is the voluntary movement of the body or its parts. It plays an important role not only in maintaining health and preventing diseases but also in curing certain ailments. It helps improve metabolism, tones up organs / systems, maintains or improves flexibility, co-ordination and balance of the musculoskeletal system and remove waste products from the body. It promotes strengthening of the body as a whole and relieves anxiety, insomnia and depression.

### **Massage (*Dalk*)**

Massage (*Dalk*) is the manipulation of superficial and deeper layers of muscles and connective tissues using various techniques. It enhances body functions and healing process, and promotes relaxation and well-being. Massage is employed to increase weight and relieve psychosomatic disorders, backache, headache and muscular pain.

### **Turkish Bath (*Hammām*)**

Turkish bath (*Hammām*), a specially designed facility used for bathing, consists of several rooms interconnected with each other. Each room has specific provisions and conditions customized according to the disease to be treated. It is used to reduce viscosity of humours, improve health and metabolism, increase innate heat of the body and evacuate waste products through skin. It strengthens the body and is recommended for the management of disease conditions like paralysis, muscular wasting and obesity.

### Cauterization (*Kaiyy*)

Cauterization (*Kaiyy*) is the process in which the body tissues are destroyed as a part of treatment by caustic agent, hot iron, rod etc. It is an effective method for treatment of destructive lesions, removal of putrefactive matter, stoppage of bleeding, etc.

### Concoctive and Purgative (*Mundij-o-Mushil*) Therapy

Concoctive-purgative (*Mundij-o-Mushil*) therapy is a combination of concoction (*Nudj*) and purgation (*Ishāl*) for evacuation (*Istifrāgh*) of morbid humours from the body. Concoction helps modify the consistency of morbid humours and make them suitable for elimination through administration of certain drugs known as concoctives (*Mundijāt*). There are concoctives specific to different humours. Once the process of concoction is completed, the ready to eliminate humours are evacuated through the process of purgation. The therapy is one of the most important principles of treatment for chronic diseases.

### Pharmacotherapy (*Ilāj bi'l-Dawā'*)

Pharmacotherapy (*Ilāj bi'l-Dawā'*) is based on drugs obtained from natural sources like herbs, animals and minerals. Considering the nature and type of the disease, the choice of drugs is governed by three factors: quality of drug in terms of temperament, quantity of drug in terms of its weight and potency, and time of administration. The drugs having temperament opposite to the disease are chosen for the correction of morbid temperament and cure of illness. The weight and potency of drugs are determined by the nature of the organ, stage and severity of the disease and other related factors such as age, sex, weight, habit and habitat, season and previous treatment.

### Surgery (*Ilāj bi'l-Yad*)

Surgery (*Ilāj bi'l-Yad*) has always been a mode of treatment in *Ṭibb* since ancient times. *Abu'l Qāsim al-Zahrāwī* (963-1013 AD) wrote a book entitled *Kitāb al-Taṣrīf li-man 'Ajiza 'ani'l-Ta'līf* with illustrations of surgical instruments. He invented several surgical techniques that are still relevant.

For use in conditions requiring surgical interventions, Unani Medicine offers certain categories of drugs, e.g. antiseptics (*Dāfi'-i-Ta'affun Adwiya*), anaesthetics

(*Mukhaddir Adwiya*), styptics (*Hābis-i-Dam Adwiya*), wound healing drugs (*Mudammil-i-Qurūh Adwiya*) and cicatrizants (*Khātim Adwiya*).

## Drugs

Unani Medicine uses only natural resources as drug. Based on their origin, the drugs are classified into three categories, viz. drugs of plant origin, drugs of mineral origin and drugs of animal origin. Physicochemical processing of drugs, without breaking their natural character, is also carried out when required. The drugs are used singly as well as in the form of a formulation.

Unani drugs act mainly by their temperament (*Mizāj*) and sometimes by their essence (*Ṣūrat Naw‘iyya*). Like all other entities of the universe, drugs are constituted by the mixing of elements. Therefore, their basic character is indicated by the resultant qualitative temperament, e.g. hot drugs (*Adwiya Hārira*) and cold drugs (*Adwiya Bārīda*). When it is said that a drug is hot or cold, it does not mean that it is intrinsically hot or cold, or hotter or colder than the human body. Rather, it means that such a drug produces a greater degree of heat or cold in the body than what is already present. Further, a drug may be less hot or cold for one person than for the other. This is one of the reasons different drugs are prescribed for the same disease in different individuals. The potency of a drug is described by grading its temperament into four degrees i.e. first, second, third and fourth degree.

Unani Medicine prescribes elaborate pharmaceutical processing of drugs for achieving stability, palatability, absorption and assimilability and enhancing efficacy and safety. These objectives are achieved by developing various dosage forms on rational and experimental basis and devising many processing techniques, e.g. burning, washing, roasting, frying and purification. Unani Medicine also has a unique feature of adding corrective drugs (*Muṣliḥ Adwiya*) to counter toxicity of main drugs.

The drugs are prepared and used in four classical forms: solid, semi-solid, liquid and vapour. Solid dosage forms are pill (*Habb*), tablet (*Qurs*), powder (*Safūf*), etc. Semi-solid dosage forms are of various types that include *Jawārish*, *Ma‘jūn*, *Khamīra*, *La‘ūq* and *Itrīfal*. Liquid dosage forms are decoction (*Joshānda*), infusion (*Khīsānda*), distillate (*‘Arq*), syrup (*Sharbat*), drops (*Qaṭūr*), etc. Vapour dosage

forms are fumigation (*Bakhūr*), steam inhalation (*Inkibāb*), perfumes (*Uṭūr*), *Lakhlakha*, etc. In recent years, dosage forms of certain classical formulations have been redesigned to increase their selectivity, efficacy and palatability.

## Strengths of Unani Medicine

The key strengths of Unani Medicine are its holistic approach and temperament based prescription and treatment. The use of natural drugs (mainly of plant origin), various therapeutic interventions and regimens for prevention and treatment of diseases and health promotion is based on the concepts of holistic healing considering the individual's psycho-physical wellbeing. Rational use of Unani medicines is usually free from adverse effects. The toning up of organs and immune system is a unique approach of Unani Medicine. In chronic and some of the incurable diseases, these approaches prove highly effective in improving the quality of life of patients.

**Concept of Temperament (*Mizāj*):** It is believed that every individual has a unique temperament according to his humoral constitution, lifestyle and environment. Any alteration in the normal temperament results into disease which is managed by correction of altered temperament using various regimens and drugs.

**Holistic approach:** Unani Medicine takes entire constitution of the body and lifestyle of the individual into account for diagnosis and treatment. Drugs and regimens are selected according to the temperament of the patient and nature of the disease.

**Promotion of health and prevention of disease:** Unani Medicine emphasizes promotion of health and prevention of disease through principles of the six essential factors.

**Cure of chronic ailments:** Unani Medicine provides safe and effective treatment for various chronic ailments of skin, gastro-intestinal and hepato-biliary systems, metabolic and psychoneurotic disorders, etc.

**Regimenal therapy:** Unani Medicine makes use of various regimens of diet, physical movement, lifestyle, etc. and techniques like cupping, leeching and venesection for prevention and treatment of diseases.

**Immunomodulation:** Unani Medicine offers a number of drugs to boost up immunity of the body. In certain diseases like tuberculosis, AIDS, and cancer, Unani drugs, used as adjuvant along with conventional treatment, play an important role in reducing toxicity of synthetic drugs, modulating the body immunity and improving overall quality of life.

**Tonics (*Muqawwiyāt*):** The concept of using organ and system specific tonics is a unique aspect. Tonics for various vital organs of the body, like cardiac tonics, nervine tonics, liver tonics, etc. are available in Unani Medicine.

**Exhilarants (*Mufarriḥāt*):** Unani Medicine offers a special group of drugs known as *Mufarriḥāt* that develop feeling of happiness by relaxing the mind and heart from various stresses. These drugs are used in the management of neuropsychiatric disorders and cardiac diseases.

**Treatment specialties:** Unani Medicine is well-known for its speciality in the management of various diseases and disorders. These include skin disorders like vitiligo, psoriasis and eczema; respiratory diseases such as bronchial asthma, chronic bronchitis and chronic sinusitis; neurological disorders, e.g. senile dementia, paresis and paralysis; diseases of GIT like acid peptic disease, dyspepsia, ulcerative colitis and irritable bowel syndrome; musculo-skeletal disorders such as arthritis and osteoporosis; lifestyle and metabolic disorders, e.g. obesity, hyperlipidaemia and gout; and sexual disorders like loss of libido, spermatorrhea and premature ejaculation.

## Unani Medicine in India

Unani Medicine was introduced in India during the eighth century and developed as a comprehensive medical system. It has been practiced, taught and documented in different parts of the country and further flourished. The Government of India facilitated the growth and development of the system recognizing its potential and scope and integrated it into the national healthcare delivery system.

With a wide network of educational institutions, comprehensive healthcare facilities, state-of-the-art research institutions and drug manufacturing industries and popularity of the system among masses, India has emerged as the world leader in Unani Medicine.

Unani Medicine along with other Indian traditional systems of medicine and Homoeopathy got a boost in 1969 with the Government of India establishing the Central Council for Research in Indian Medicine and Homoeopathy (CCRIMH) to conduct scientific research. The CCRIMH was dissolved in 1978 to set up four separate research councils – one each for Ayurveda & Siddha, Unani Medicine, Yoga & Naturopathy, and Homoeopathy for focused research.

The Government of India continues to patronize Unani Medicine along with other Indian traditional medical systems with increased support and funds for optimum utilization of their potentials in healthcare delivery systems. Simultaneously, concrete steps are being taken to introduce and propagate Unani Medicine at global level through international cooperation.

## Framework of Unani Medicine in India

### Ministry in Union Government

#### Ministry of AYUSH

- The Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) looks after affairs related to Unani Medicine and other AYUSH systems.

### Regulatory Framework

#### A. Statutory / Regulatory Bodies

##### 1. Central Council of Indian Medicine (CCIM)

It is the statutory body established in 1971 under Indian Medicine Central Council Act, 1970 for regulating education and practice in Ayurveda, Siddha and Unani Medicine.

##### 2. Drug Control Cell

The Drug Control Cell under Ministry of AYUSH deals with matters pertaining to licensing and regulation of Ayurveda, Siddha and Unani drugs.

#### B. Acts, Rules & Regulations

1. Education system is regulated by IMCC Act 1970
2. Registration of practitioners is regulated by IMCC Act, 1970 and respective State Acts
3. Drug industry is regulated by Drugs and Cosmetics Act, 1940

### Education and Training

#### Academic Programmes

- Bachelor of Unani Medicine and Surgery (BUMS) (*Kāmil-i-Ṭibb-o-Jarāhat*)
- Doctor of Medicine (MD) (*Māhir-i-Ṭibb*) and Master of Surgery (MS) (*Māhir-i-Jarāhat*)
- Doctoral programme (PhD)

#### Academic Institutions

1. Colleges: Total – 54
  - Undergraduate level: 40

- Undergraduate and postgraduate level: 12
- Institutes with postgraduate courses only: 02
- 2. National Institute of Unani Medicine
  - Located at Bangalore, it is one of its kind; offers postgraduate and doctoral programme (PhD)

### Research & Development

- A. **Central Council for Research in Unani Medicine**
  - An apex autonomous body established in 1978 to conduct research and development in Unani Medicine
- B. **Pharmacopoeial Laboratory for Indian Medicine**
  - It is the supporting structure of the Pharmacopoeia Commission for Indian Medicine & Homeopathy for developing pharmacopoeial standards for Ayurveda, Siddha and Unani drugs and publishing Pharmacopoeia of India for each system.

### Health Care Delivery

1. Hospitals: Total - 259
2. Dispensaries: Total - 1621
3. Registered practitioners: Total - 51,110

### Industries

Manufacturing units: Total - 625

### International Cooperation

1. Academic chair in Unani Medicine at School of Natural Medicine, University of Western Cape, South Africa
2. Memorandum of Understanding (MoU) between the Central Council for Research in Unani Medicine and Hamdard University, Bangladesh for establishing academic chair in Unani Medicine at the university
3. MoU between the Central Council for Research in Unani Medicine and Avicenna Tajik State Medical University, Tajikistan for cooperation in the field of Unani Medicine
4. Deputation in international conferences / workshops / seminars and scientific gatherings
5. Fellowship programs for foreign nationals

## Education and Practice

Education and practice of Unani Medicine have been prevalent in India for centuries. Various courses of study in Unani Medicine were conducted by state boards and universities. With the establishment of a central regulatory body in 1971, uniform course curricula and syllabi were framed for implementation across the country. The Indian Medicine Central Council (IMCC) Act, 1970 provide well-defined regulations to establish educational institutions and to register the practitioners of Unani Medicine. The Central Council of Indian Medicine (CCIM) is the statutory body established under the said act to prescribe and enforce minimum standards of education and maintain a central register of practitioners of Indian systems of medicine.

### Education

Since its establishment, the CCIM has been framing and implementing various regulations including the curricula and syllabi in Indian systems of medicine, viz. Ayurveda, Siddha and Unani Medicine at both undergraduate and postgraduate levels in the country. All the colleges of these systems are affiliated to various universities in the country under whose jurisdiction the examination system is controlled.

The graduation course of study in Unani Medicine leading to the award of the degree of Bachelor of Unani Medicine and Surgery (BUMS) (*Kāmil-i-Ṭibb-o-Jarāḥat*) is governed under the provisions of the Indian Medicine Central Council Regulations, 1986 as amended from time to time. The postgraduate courses leading to the award of Doctor of Medicine (*Māhir-i-Ṭibb*) and Master of Surgery (*Māhir-i-Jarāḥat*) degrees are regulated by the Indian Medicine Central Council (Postgraduate Unani Education) Regulations, 2007.

The regulations to establish Unani medical institutions are called Indian Medicine Central Council (Minimum Standard Requirements of Unani Colleges and Attached Hospitals) Regulations, notified by the Government of India in 2003. Unani colleges and their attached hospitals mandatorily fulfil the minimum standard requirements of infrastructure, and teaching and training facilities mentioned in the regulations for consideration of grant of permission for undertaking admissions in undergraduate and postgraduate courses. The

teaching hospitals fulfil all statutory requirements of the concerned state or union territory or local authority to establish and run hospitals.

Presently, there are 55 academic institutions that impart Unani medical education in the country. Of them, 12 offer both undergraduate and postgraduate courses, 40 offer only undergraduate courses, and three – National Institute of Unani Medicine (NIUM), Bengaluru, National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad, and Regional Research Institute of Unani Medicine (RRIUM), Srinagar – offer only postgraduate courses. The postgraduate courses are taught in 11 disciplines of Unani Medicine with total intake capacity of 232 students. The total intake capacity in undergraduate course is 2985 students per year.

The NIUM, Bengaluru has been developed as a model institute for teaching, training, and research in Unani Medicine. The institute offers postgraduate courses in ten disciplines. The NIUM, Bengaluru, Government Nizamia Tibbi College, Hyderabad and the CCRUM in collaboration with Jamia Millia Islamia, New Delhi conduct Ph.D. programmes also. In 2019, foundation stone for another National Institute of Unani Medicine was laid at Ghaziabad, Uttar Pradesh.

### Practice

Under the Indian Medicine Central Council Act, 1970, the CCIM prescribes core elements of medical practice including recognized qualifications, registration of practitioners, set professional etiquette, and code of conduct and ethics. The state governments can accord specific privileges to the registered practitioners by enabling provisions in the state laws pertaining to medical practice. The central and state registers of Unani practitioners are maintained by the central and state councils, respectively. A Unani practitioner requires registration for practice after obtaining prescribed academic qualification.

At present, a total of 51,110 Unani practitioners are registered under the central and state boards. There are a total of 1,621 dispensaries and 259 hospitals in the country.

## Research and Development

The tradition of research in Unani Medicine dates back to the time of its origin when Greek physician-philosopher Hippocrates freed medicine from superstitions and presented it in its initial scientific form. Thereafter, the Romans, the Arabs, the Persians, and scholars from Spain, Northern Africa, Turkey, Central Asia, and India contemporized and developed the system to great heights.

The scientific research in Unani Medicine was given a boost in India by Masīh al-Mulk Ḥakīm Ajmal Khan, a versatile genius of his time, in the 1920s. He identified Dr. Salimuzzaman Siddiqui, a chemist, for undertaking chemical studies on some important medicinal plants used in Unani Medicine. In 1931, Dr. Siddiqui discovered medicinal properties of *Asravl* (*Rauwolfia serpentina* L.) and successfully isolated an antiarrhythmic agent from this plant, which he named as *Ajmaline* after his mentor Hakim Ajmal Khan. Later, he also extracted some other alkaloids from the same plant that included *Ajmalinine*, *Ajmalicine*, *Isoajmaline* and *Neoajmaline* for treatment of mental and cardiovascular ailments. It paved the way for sustained research in the system. A number of committees appointed by the Government of India recommended a detailed outline for the development of Indian systems of medicine. Systematic scientific research in these systems started with the establishment of CCRIMH in 1969. The Central Council for Research in Unani Medicine established in 1978 accelerated the pace of research and development in Unani Medicine and continues to translate the age-old wisdom into modern scientific language. The academic institutions like NIUM, Bengaluru; AKTC, Aligarh Muslim University, Aligarh; Jamia Hamdard, New Delhi; Ayurvedic and Unani Tibbia College, New Delhi; and Government Nizamia Tibbi College, Hyderabad also contribute to the cause of research through scientific studies.

### Central Council for Research in Unani Medicine

The Central Council for Research in Unani Medicine (CCRUM) was established in 1978 consequent upon the dissolution of CCRIMH and started functioning from January 1979 with following main objectives:

- Formulation of aims and patterns of research on scientific lines in Unani Medicine



*A view of the Central Councils Combined Building Complex that accommodates the Central Council for Research in Unani Medicine*

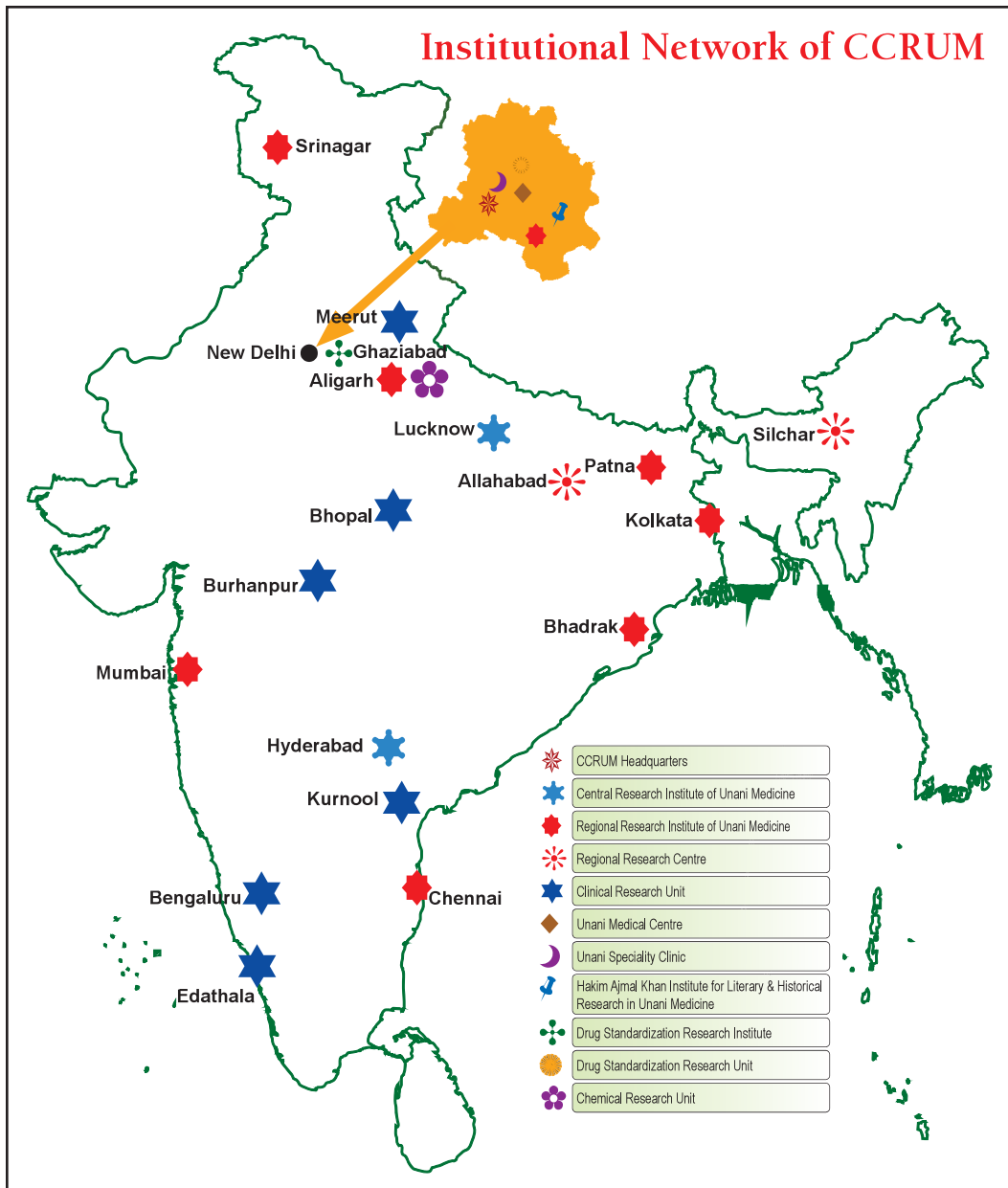
- To undertake research or any other programmes in Unani Medicine
- Prosecution of and assistance in research and propagation of knowledge and experimental measures generally in connection with the causation, mode of spread and prevention of diseases
- To initiate, aid, develop and coordinate scientific research on different aspects, fundamental and applied, of Unani Medicine, and to promote and assist institutions of research for the study of diseases, their prevention, causation and remedy
- To finance enquiries and researches for the furtherance of the objectives of the council
- To exchange information with other institutions, associations and societies interested in the objectives similar to those of the council, especially in the observation and study of diseases in the East in general, and in India in particular
- To prepare, print, publish and exhibit any papers, posters, pamphlets, periodicals and books for furtherance of the objectives of the Council and to contribute to such literature

As the apex autonomous research organization under the Ministry of AYUSH, Government of India, the CCRUM is engaged in conducting scientific research on the applied and fundamental aspects of Unani Medicine since its inception. Over the years, it has won appreciation from various quarters for multifaceted research and achievement in the promotion and propagation of the system.

### Institutional Network of CCRUM

The CCRUM is headquartered in New Delhi and functions through a network of 22 centres located in different parts of the country as mentioned below:

S.No.	Centre	Number	Location
1	National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD)	01	Hyderabad
2	Central Research Institute of Unani Medicine (CRIUM)	01	Lucknow
3	Regional Research Institute of Unani Medicine (RRIUM)	08	Chennai, Bhadrak, Patna, New Delhi, Mumbai, Kolkata, Aligarh and Srinagar
4	Regional Research Centre (RRC)	02	Allahabad and Silchar
5	Clinical Research Unit (CRU)	06	Bhopal, Burhanpur, Meerut, Bengaluru, Kurnool and Edathala
6	Hakim Ajmal Khan Institute for Literary & Historical Research in Unani Medicine (HAKILHRUM)	01	New Delhi
7	Drug Standardization Research Institute (DSRI)	01	Ghaziabad
8	Drug Standardization Research Unit (DSRU)	01	New Delhi
9	Chemical Research Unit (Grant-in-aid)	01	Aligarh



The National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad, earlier known as Central Research Institutes of Unani Medicine, Hyderabad has earned worldwide fame for the successful treatment of vitiligo and conducted multifaceted studies leading to the development of safe and effective treatment for various diseases including vitiligo, psoriasis and



*Shri Shripad Yesso Naik, Hon'ble Minister of State (IC) for AYUSH, Government of India and Shri G. Kishan Reddy, Hon'ble Minister of State for Home Affairs, Government of India inaugurating NRIUMSD, Hyderabad on 3<sup>rd</sup> November, 2019*

sinusitis. Taking into consideration the infrastructure, research facilities and scientific contributions of the institute, the Ministry of AYUSH, Government of India upgraded it from a central research institute to NRIUMSD in 2019.

In a move to strengthen research facilities at its institutes, the council has recently upgraded laboratories at NRIUMSD, Hyderabad; and RRIUMs, Chennai, Srinagar and Aligarh with state-of-the-art instruments, modern technology and renewed structure. The Department of Science and Technology (DST), Government of India funded a project worth Rs. 46.2 million for strengthening preclinical facility at RRIUM, Srinagar.

The CCRUM has also taken initiative for accreditation of some of its institutes by National Accreditation Board for Hospitals & Healthcare Providers (NABH) - a constituent board of Quality Council of India set up to establish and operate accreditation programmes for healthcare organizations. The NRIUMSD, Hyderabad has already been awarded ISO 9001:2008 certification by the Bureau of Indian Standards.

The CRIUM, Lucknow; and RRIUMs, Patna and Bhadark got their new buildings during last few years as part of strengthening infrastructure and creating new facilities. The RRC, Silchar (Assam) that was housed in the premises of Civil Hospital in the city of Silchar, got a section of land in 2014 by the Government of Assam. The capital works for upgrading the centre to Regional Research Institute of Unani Medicine is in full swing.

Recently, around 8 acres of land in Faridabad (Haryana) has been allotted by the Government of Haryana to the CCRUM for establishing National Research Institute of Unani Medicine for Non-communicable Diseases. The institute is proposed to be developed as an establishment having state-of-the-art research facilities especially for non-communicable diseases.

### Co-location centres

Under the scheme of co-location of AYUSH centres, the CCRUM runs various centres in leading allopathic hospitals in Delhi. The centres include Unani Medical Centre at Dr. Ram Manohar Lohia Hospital, Unani Specialty Centre at Dr. Deen Dayal Upadhyay Hospital and Unani Medical Centre at Safdarjung



*Shri Shripad Yesso Naik, Hon'ble Minister of State (IC) for AYUSH, Government of India inaugurating Unani Medical Centre at Safdarjung Hospital, New Delhi on 13<sup>th</sup> September, 2019*

Hospital. Besides, extending General Out-patient Department (GOPD) facilities, the centres provide specialized Unani treatment for selected disorders like vitiligo, eczema, psoriasis, rheumatoid arthritis, bronchial asthma, sinusitis and diabetes mellitus.

Further, the AYUSH Wellness Clinic (AWC), established at the President's Estate, New Delhi in 2015 also has facility for Unani Medicine which is managed by the CCRUM. The AWC is a unique project where all the AYUSH systems have come under one roof to provide medical services to the residents of the President's Estate. Along with general treatment, some specialized Unani therapies including cupping, massage, leeching and hot fomentation are provided to the patients at the clinic.

### Research Programmes

The research programmes of the council are executed in three modes, viz. intramural research (IMR), collaborative research and extramural research (EMR). Studies under IMR are conducted at different institutes of the council, while collaborative research is carried out under the Expression of Interest Scheme in collaboration with institutions of excellence having specialized facilities. The EMR scheme is implemented by the Ministry of AYUSH with its secretariat at the CCRUM headquarters.

The IMR mainly comprises drug standardization research, preclinical research, clinical research, survey and cultivation of medicinal plants and literary research. The Council also conducts outreach activities that include GOPD, mobile clinical research programme, school health programme, schedule caste sub-plan and tribal sub-plan, health camps, integration of Unani in NPCDCS and *Swasthya Rakshan* programme.

### Drug Standardization Research

Under the drug standardization research programme, standardization of Unani single drugs and formulations is undertaken. The Council establishes pharmacopoeial standards of single drugs and formulations and develops standard operating procedures (SOPs) for their manufacturing. This programme is being carried out at DSRI, Ghaziabad; DSRU, New Delhi; NRIUMSD, Hyderabad; and RRIUM, Chennai, Srinagar and Aligarh.



*A view of Drug Museum at RRIUM, Chennai*



*A view of Pharmacognosy Research Laboratory at DSRI, Ghaziabad*

Under this programme, the council has established physicochemical standards for 250 single drugs and published Standardization of Single Drugs of Unani Medicine in five volumes. Likewise, physicochemical standards of 350 Unani formulations have also been established and the outcome has been published in four volumes of Physicochemical Standards of Unani Formulations. The Council has also published Unani Pharmacopoeia of India, Part–I in six volumes comprising 298 single drugs, Unani Pharmacopoeia of India, Part–II in four volumes comprising 200 formulations, Chemistry of Medicinal Plants, Part–I comprising 52 plants, National Formulary of Unani Medicine in six volumes comprising 1,229 formulations and Chemical Investigations of some Unani Medicinal Plants comprising 76 plants.

### Preclinical Research

Unani drugs are generally considered safe as they are drawn from natural sources, mostly plants, and used by humans for centuries. The drugs having toxic effects in crude form are processed and purified in several ways before recommended use. Further, Unani drugs generally affect an entire organ and sometimes more than one organs. However, in recent times, the importance of discovering the cellular and molecular bases of Unani drugs has been greatly felt.



*A view of Pharmacology Laboratory at NRIUMSD, Hyderabad*

The CCRUM undertakes pre-clinical research with the objective of establishing safety and efficacy of Unani drugs through *in-vitro* and *in-vivo* studies. The studies aim to validate claims on Unani drugs for their pharmacological actions and therapeutic uses, besides generating necessary information on rational therapy, particularly pharmacokinetics data required for determining the exact dose, dosing schedule and safety and toxicity. The council conducts acute and repeated dose - 28 days and 90 days, and chronic toxicity studies on classical Unani formulations as well as on new drug entities. The pharmacological screening of Unani drugs for their anti-diabetic, anti-inflammatory, analgesic, antipyretic, antidepressant, antiepileptic, anti-hyperlipidemic, antimalarial, anthelmintic actions is conducted, besides studies on liver regeneration, hepatoprotection, nephroprotection and cognitive improvement.



A view of Pharmacology Laboratory at RRIUM, Srinagar

The programme runs at NRIUMSD, Hyderabad and RRIUM, Srinagar. The council has so far completed pharmacological studies on more than 190 single and compound drugs and published a document entitled 'Pharmacological and Toxicological Studies on Unani Single and Compound Drugs'.

### Clinical Research

The Council conduct clinical research with a view to develop safe and effective Unani treatment in prioritized areas. As part of this programme, new drug development for emerging diseases and clinical validation of safety and efficacy of Unani pharmacopoeial formulations as well as therapies are undertaken.

Since inception, the council has been conducting clinical studies of varied grades of evidences and has traversed a path from prospective observational



*A view of NRIUMSD, Hyderabad*

studies to randomized controlled trials (RCT's) over the years. The emphasis is laid upon validation of fast-acting drugs in diseases where Unani Medicine has strength. Numerous multi-centric RCT's have been conducted to ascertain therapeutic efficacy of coded Unani formulations on various diseases including vitiligo (*Baraṣ*), psoriasis (*Dā' al-Ṣadaḡ*), filariasis (*Dā' al-Fil*), *Kala Azar* (*Ḥummā Aswad*), diabetes mellitus (*Dhayābīṭus Sukkarī*), hypertension (*Ḍaḡḡ al-Dam Qawī*), chronic sinusitis (*Iltihāb Tajāwīf al-Anḡ*) and bronchial asthma (*Ḍīq al-Nafas*). The studies are conducted on modern scientific parameters without compromising on the fundamentals of Unani Medicine.

The council, with the objective of validating therapeutic efficacy of Unani drugs, conducts both disease and drug-based trials. Under this activity, more than 150 clinical studies have been completed so far and the council has achieved significant lead in the treatment of vitiligo, rheumatoid arthritis, hepatitis, sinusitis, bronchial asthma, psoriasis, eczema, filariasis, etc.

The classical Unani formulations which have been in use for centuries are generally considered safe, but to establish their safety on scientific parameters,

the council undertook the task and identified formulations from National Formulary of Unani Medicine including those listed in Essential Drug List for studies. The safety and efficacy of a number of formulations was validated in different diseases, such as insomnia (*Sahar*), amnesia (*Nisyān*), headache (*Ṣudā'*), cerebro-asthenia (*Ḍu'f al-Dimāgh*), chronic rhino-sinusitis (*Nazla Muzmin*), pharyngitis (*Waram al-Halaq*), sore throat (*Khushūnat al-Halaq*), bronchial asthma (*Dīq al-Nafas*), functional dyspepsia (*Sū' al-Haḍm*), anorexia (*Ḍu'f al-Ishtihā*), dysentery (*Zahīr*), helminthiasis (*Dīdān-i-Am'ā*), fever (*Ḥummā*), anaemia (*Sū' al-Qinya*), hepatitis (*Warm al-Kabid*), rheumatoid arthritis (*Waja' al-Mafāsil*), gout (*Niqris*), nephrolithiasis (*Ḥaṣāt al-Kulya*), scabies (*Jarab*), macules / pustules (*Buthūr al-Jild*), dermatophytosis (*Qūbā*), heavy menstrual bleeding (*Kathrat al-Ṭamth*), amenorrhoea (*Ihtibās al-Ṭamth*), leucorrhoea (*Sayalān al-Raḥim*), bleeding piles (*Bawāsīr Dāmiya*), non-bleeding piles (*Bawāsīr 'Umya*), palpitation (*Khafaqān*), premature ejaculation (*Sur'at al-Inzāl*) and diabetes mellitus type-2 (*Dhayābītus Sukkarī Qism Thanī*).

The efficacy of different modes of regimental therapies has also been established in different diseases, like efficacy of cupping in osteoarthritis and that of leeching in hypertension and frostbite.

### Research on Fundamentals

In order to scientifically establish and interpret the relevance and rationale of various theories and philosophies of Unani Medicine, the council is undertaking a project on the fundamentals of Unani Medicine at NRIUMSD, Hyderabad in phased manner. In the first phase, different temperaments (*Damwī*, *Balghamī*, *Ṣafrāwī* and *Sawdāwī*) were assessed as per standardized format and scientifically validated in healthy volunteers. Variability in different physiological, pathological and biochemical parameters in healthy subjects of different temperaments was also studied. In the second phase, susceptibility of acquiring diseases in relation to the temperaments of the patients was studied. In the third phase of the project, response to the treatment in relation to the temperament of the patients was evaluated scientifically in diseases like vitiligo, infective hepatitis, sinusitis, psoriasis, essential hypertension, hyperlipidaemia and diabetes mellitus type-II.

Some genetic studies in healthy volunteers as well as in patients of hepatitis, cancer and some *Ṣafrāwī* and *Sawdāwī* diseases with reference to humours have



*A view of fundamental research laboratory at NRIUMSD, Hyderabad*

also been conducted. These studies may help understand the molecular basis of basic principles of Unani Medicine.

### Survey and Cultivation of Medicinal Plants

The survey and cultivation of medicinal plants programme plays a pivotal role in the drug research programme of the council. The council undertakes extensive surveys of medicinal plants in different parts of the country with the objectives of collecting and identifying medicinal plants found in different forest zones of the country; studying their distribution, availability and threats, and documenting folklore claims. This programme is conducted through NRIUMSD, Hyderabad; and RRIUM, Chennai, Srinagar, Bhadrak and Aligarh.

Under the programme, ethno-botanical surveys have been conducted in the forest zones, mainly those dominated by different tribes in Andhra Pradesh, Telangana, Tamil Nadu, Bihar, Jammu & Kashmir, Jharkhand, Madhya Pradesh, Karnataka, Kerala, Maharashtra, Odisha, Rajasthan, Uttarakhand and Uttar Pradesh. Over 1,06,301 specimens of medicinal plants have been collected from these surveys. The council has also gathered 16,400 folk claims of medicinal and other uses of locally available plants. The research outcomes have been



*CCRUM researchers recording folk claims about medicinal plants*

published in the form of papers and books including Medicinal Plants of North Arcot District, Tamil Nadu, Unani Medicinal Plants of Dindigul District, Tamil Nadu, Medicinal Plants in Folklore of Bihar & Orissa, Medicinal Plants in Folklore of Kashmir Himalayas, Medicinal Plants in Folklore of Northern India (Parts I & II), Medicinal Plants in Folklore of Southern India (Parts I , II & III), Medicinal Plants of Aligarh, Uttar Pradesh, Medicinal Plants of Andhra Pradesh (Parts I & II) and Medicinal Plants of Gwalior Forest Division.

### Literary Research

The age-old wisdom of Unani Medicine is contained in its classical literature available mainly in Arabic, Persian and to some extent in Urdu language. To get full advantage of the rich experience of ancient scholars and incorporate the theories and philosophy of the system, a programme dedicated to literary research in Unani Medicine is undertaken since the inception of the council. It aims at collection and preservation of source material on Unani Medicine including manuscripts and rare books, translation of classical texts in contemporary languages, documentation of information related to Unani Medicine, compilation of references related to drugs and therapeutics from classical treatises and reproduction of classical literature. The programme

is carried out at Hakim Ajmal Khan Institute of Literary & Historical Research in Unani Medicine, New Delhi.

Under this programme, the council has collected and preserved thousands of rare books and some manuscripts. It has also conducted survey of numerous Indian libraries and personal collections and identified 2400 Unani manuscripts. The council has been successful in translation and publication of 24 important classical books spreading over 62 volumes. In collaboration with the World Health Organization, ‘Standard Unani Medical Terminology’ comprising 4,028 Unani terms has been brought out under the literary research programme. Publication of ‘Standard Unani Treatment Guidelines for Common Diseases’ comprising description of 130 diseases in two volumes, compilation of more than 10 books on varied subjects of Unani Medicine, reprinting of 74 rare classical books, development of a database of postgraduate studies in *Kulliyat-i-Ṭibb* and *Mu‘alajāt* and publication of a multilingual dictionary of single drugs of Unani Medicine are some other achievements of the council in the field of literary research. The council also played a pivotal role in bringing out ‘National Unani Morbidity Codes’, a publication of the Ministry of AYUSH in English and Hindi.



First page of a manuscript of *Al-Qānūn fi'l-Ṭibb* by Ibn Sīnā

### Collaborative Research

In order to generate adequate scientific data to support the claims of safety and efficacy of Unani drugs through experimental and clinical research using modern tools, the council undertakes research in collaboration with institutions of excellence under the Expression of Interest scheme. The CCRUM provides funds to the collaborating institutions for fellowships, consumables and to some extent for creating or upgrading facilities. The council encourages

collaborative studies in the areas pertaining to translation of clinical experience through evidence based experimental research in autoimmune diseases, lifestyle disorders, viral infections and adjuvant therapies to counter side effects of conventional medicines; modulation of the immune mechanism in infectious diseases; scientific validation of fundamentals of Unani Medicine; pharmacokinetics and pharmacodynamics of Unani drugs; redesigning of classical dosage forms of Unani formulations; development of organ-specific immune-modulators; and co-opting nano-techniques for Unani formulations, etc.

The collaborative studies completed so far include the following:

S.No.	Study Title	Collaborating Institute
1.	Comparison of clinical efficacy and safety of Unani therapy in the form of systemic UNIM 004 and topical UNIM 005 with sunlight and conventional allopathic therapy in form of PUVA sol and topical mometasone cream in the treatment of clinically stable vitiligo	Department of Dermatology, All India Institute of Medical Sciences, New Delhi
2.	Collaborative project on autism in children using Unani herbal neuro restorative supplement and standard rehabilitation therapies	Foundation for Spastic and Mentally Handicapped Persons - UDAAN for the Disabled, New Delhi
3.	A randomized clinical trial to study the effect of <i>Safūf Muhazzil</i> with 'Arq-i-Zira and orlistat on biomarkers of obesity	Department of Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh
4.	Investigation on pharmacodynamic and pharmacokinetic interaction of Unani plants, <i>Tinospora cordifolia</i> and <i>Eugenia jambolana</i> (anti-diabetic potential) with hypoglycemic drugs	Shobhaben Pratapbhai Patel School of Pharmacy & Technology Management University, Mumbai
5.	Redesigning of dosage form of <i>Ma'jūn Dabīd al-Ward</i> and <i>Ma'jūn Falāsifa</i> into tablet form along with their physicochemical and pharmacological evaluation	Department of Saydala, Ajmal Khan Tibbiya College, Aligarh Muslim University, Aligarh

The continuing studies include the following:

S.No.	Study Title	Collaborating Institute
1.	Evaluation of <i>Aftīmūn</i> ( <i>Cuscuta reflexa</i> Roxb.) plant and its seeds on different human cancer ( <i>Saraṭān</i> ) cell lines	Department of Chemistry, Jamia Millia Islamia, New Delhi
2.	Experimental studies on the hepato-protective and immune-modulatory effects of <i>Dawā' al-Kurkum</i> , a poly-herbal Unani preparation and its cellular and molecular mechanisms in rats	Department of Pharmacology, Vallabh Bhai Patel Chest Institute, University of Delhi, New Delhi
3.	Evaluation of the anticancer potential of a Unani pharmacopoeial formulation, <i>Dawā' al-Kurkum</i>	Amity Institute of Pharmacy, Amity University, Noida
4.	Pharmacokinetics, stability and quality control studies on ' <i>Araqiyāt</i> of Unani Pharmacopoeia of India using HPTLC and GC-MS	Department of Pharmacognosy and Phytochemistry, Jamia Hamdard, New Delhi
5.	Delineating the anti-cancer potential and the mechanism of action of Unani medicinal formulation <i>Iṭrīḡal Aftīmūn</i> in chronic myelogenous leukemia	Department of Biochemistry, All India Institute of Medical Sciences, New Delhi
6.	Effect of Unani preparations on macrophage polarization and its role in increased browning of fat leading to amelioration of insulin resistance	Department of Biochemistry, Jamia Hamdard, New Delhi
7.	Identification of anti-dengue viral compounds from Unani medicinal plants and formulations	Institute of Molecular Medicine, School of Interdisciplinary Sciences, Jamia Hamdard, New Delhi
8.	Reverse pharmacology of <i>Asrīn</i> and <i>Dawā' al-Shifā'</i> to evaluate their antihypertensive efficacy, safety and mechanism of action	Division of Pharmacology, CSIR - Central Drug Research Institute, Lucknow

S.No.	Study Title	Collaborating Institute
9.	Pharmacokinetics, stability and quality control studies on <i>Itrifal</i> of Unani Pharmacopoeia of India (Part 2 Vol. 1 & Vol. 2) using chromatographic analysis by HPTLC and LC-MS	Department of Pharmacognosy & Phytochemistry, Jamia Hamdard, New Delhi
10.	<i>In-vitro</i> evaluation of antiviral activity of Unani drugs and their green nano-particles against dengue virus	Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi
11.	Phytochemical standardization and evaluation of anti-cancer and immunomodulatory activity of Unani formulation, <i>Itrifal Ghudadi</i>	Cell and Translational Research Division, Interactive Research School for Health Affairs, Bharati Vidya Peeth University, Pune
12.	Preclinical evaluation of UNIM-401 and UNIM-403 against experimentally induced psoriasis and UNIM-004 and UNIM-005 for their efficacy against experimentally induced vitiligo in mice	National Institute of Pharmaceutical Education and Research, Hyderabad
13.	A clinical study to evaluate the safety and efficacy of <i>Marham Dākhliyūn</i> in cases of <i>Qurūh-i-Raḥim</i> (cervical erosions / lesions including CIN-1 AND CIN-2 stage	National Institute of Cancer Prevention and Research, Noida
14.	Effect of co-administration of Unani pharmacopoeial formulation <i>Qurṣ Ṭabāshīr Saraṭānī</i> and ' <i>Araq Harā Bharā</i> on the pharmacokinetics of CAT-I in drug sensitive pulmonary tuberculosis and DOTS plus in multi-drug resistant tuberculosis patients	National Institute for Research in Tuberculosis, Chennai

### Extramural Research

The CCRUM coordinates extramural research projects related to Unani Medicine under the EMR scheme of the Ministry of AYUSH, Government of

India. The scheme encourages research and development in priority areas based on disease burden in alignment to the national health programme. The objectives of the scheme are to support research and development for treatment of prioritized diseases, to standardize, validate and develop scientific evidence for safety, efficacy and quality of AYUSH drugs and therapies, to make scientific explorations of AYUSH systems with interdisciplinary approaches, to achieve need-based outcome in priority areas, and to develop the potential of human resource in AYUSH system specially to inculcate aptitude and expertise to AYUSH systems.

Drug research, pharmacological evaluation, preclinical and clinical research, and validation of Unani fundamentals are some of the areas where studies have been conducted under the scheme.

### Patents

Based on the outcome of research conducted by the Council, 17 patents have been granted by the Indian Patent Office (IPO). Some of them are related to new drugs for bronchial asthma, rheumatoid arthritis, pyrexia, haemorrhage, worm infestation, constipation, coryza, etc., while others are related to the Sequence Characterized Amplified Region (SCAR) primers and adulteration of single Unani drugs. Besides, seven patent applications are under consideration at the IPO.

### Outreach Activities

In addition to its core business, the council extends research-oriented healthcare services to the masses through GOPD, mobile clinical research, school health, scheduled caste sub-plan (SCSP) and tribal sub-plan (TSP), gender component plan, health camps, etc. Taking a further step for prevention and treatment of diseases, the CCRUM is also executing two important programmes, Integration of Unani Medicine with NPCDCS and *Swasthya Rakshan* programme.

### General Out-patient Department

The General Out-patient Department (GOPD) facility is available at all the institutes and units of the council engaged in clinical research, besides AYUSH Wellness Centre in President's Estate and co-location centres in New Delhi. The

facility aims at offering advice on health issues and providing Unani treatment to the visiting population. Geriatric OPD, RCH / MCH OPD and OPD for post-trial access are also conducted.

### **Mobile Clinical Research Programme**

The mobile clinical research programme aims at providing health education and healthcare facilities to the population living in rural areas and urban slums. The localities are identified and visited by professionals of the council for advising and providing Unani treatment to the patients at their doorstep. The population is also screened with a view to include individuals in research studies.

### **School Health Programme**

The school health programme aims at improving the health and hygiene status of school children and reducing morbidity rate among them through health education and healthcare facilities. The schools especially those located in rural areas are identified for providing health check-ups, related advice and treatment for common ailments.

### **Gender Component Plan**

The healthcare facilities are available to women at all clinical centres of the council and emphasis is laid upon registering female patients in the pockets adopted under mobile clinical research programme. Specialized awareness campaign on health and hygiene, food and nutrition and prevention of disease is organised among women.

### **Scheduled Caste Sub-Plan and Tribal Sub-Plan**

The council runs mobile healthcare programme under schedule caste sub-plan (SCSP) and tribal sub-plan (TSP) at selected institutes / centres to outreach scheduled caste and scheduled tribe population. The villages having predominant population of desired beneficiaries are identified for examining their health status and screening for prevalent diseases. The programme also aims to create awareness among the masses on promotive, preventive and curative health aspects through lectures, group meetings, health camps and distribution of literature.

## Integration of Unani Medicine with NPCDCS

Keeping in view the vital role of AYUSH systems of medicine in prevention of non-communicable diseases, the Ministry of AYUSH in collaboration with Directorate General of Health Services, Government of India is undertaking a project to integrate AYUSH systems with National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) through its research councils. The project aims to ensure prevention and early diagnosis of lifestyle diseases, reduce complications and drug dependence, and supplement NPCDCS in preservation and promotion of health. The CCRUM initiated this project in 2016 through its Central Research Institute of Unani Medicine, Lucknow at 17 Community Health Centres (CHCs), 54 Primary Health Centres (PHCs) and NPCDCS Cell at District Hospital of Lakhimpur Kheri in Uttar Pradesh.

Under this project, lifestyle clinics were set up at the District Hospital and each of the 17 CHCs where after due screening healthy individuals are educated about preventive measures and healthy lifestyle and high risk individuals are offered diet therapy, regimen therapy and Yoga therapy, whereas the diseased people are provided Unani medicinal treatment along with the above therapies. Besides, all the 54 PHCs in the district are covered through health camps for screening, health awareness and propagation of healthy lifestyle. The visitors suffering from any disease covered under the programme are referred to the lifestyle clinic for proper treatment.

Since its launch, a total of 5,32,946 individuals have been registered under the programme and treated with Unani drugs and therapies. Besides, more than two thousand health camps have been organized benefiting over 42,000 individuals through health screening, awareness lectures and distribution of disease specific literature.

## Swasthya Rakshan Programme

The Government of India launched 'Swachh Bharat Abhiyan' on 2<sup>nd</sup> October 2014 to accomplish the vision of a 'Clean India'. On the lines of *Swachh Bharat Abhiyan* (Clean India Mission), the Ministry of AYUSH started *Swasthya Rakshan Programme* (SRP) through its national institutes and research councils to promote health by adopting at least five villages initially for identifying,

preventing and treating the diseases related to poor hygiene and sanitation. The main objective of the programme is to provide AYUSH treatment and organize camps for screening and early diagnosis of diseases in rural areas. It also aims to create health awareness through health education and distribution of IEC material in local languages for better outreach and compliance.

The programme that was initiated by the CCRUM in 2016 at its 12 institutes/centres completed three years in 2019. A total of 180 villages (60 per year) were adopted under the programme wherein 2,17,869 patients were registered. Unani treatment was provided to the villagers at their doorstep, while the patients requiring laboratory investigations and further consultation were referred to the respective institute of the council. The patients requiring special medical care were referred to higher medical centres.

### Linking Education with Research

With a view to link education with research and utilize the comprehensive facilities available at CCRUM's institutes, the council started postgraduate (MD) and doctoral (PhD) programmes in Unani Medicine from the academic year 2016-17. The MD programme in *Ilm al-Adwiya* and *Mu'āljāt* is running at NRIUMSD, Hyderabad and RRIUM, Srinagar in affiliation with Kaloji Narayana Rao University of Health Sciences, Warangal (Telangana) and University of Kashmir, Srinagar, respectively. The intake capacity is 07 students in each discipline at each centre. The PhD programme in *Ilm al-Adwiya* and *Mu'āljāt* with three seats in each discipline is running at NRIUMSD, Hyderabad in collaboration with Jamia Millia Islamia, New Delhi.

### Collaboration

The CCRUM having good infrastructure and expertise in Unani Medicine establishes links with academic and scientific institutions of repute to work together and leverage their facilities and expertise for the advancement of traditional knowledge in scientific language and furtherance of other objectives of the council. For this purpose, the council enters into collaborations and agreements with them.

Presently, the CCRUM has MoU with Jamia Millia Islamia, New Delhi; Jamia Hamdard, New Delhi; National Institute for Pharmaceutical Education and



*Prof. Asim Ali Khan, Director General, CCRUM and Dr. H. Purushotham, Chairman & Managing Director, NRDC exchanging document after signing MoA on 29<sup>th</sup> October, 2018*

Research, Hyderabad; National Research Development Corporation, New Delhi; Invest India for AGNi – Accelerating Growth of New India’s Innovations, New Delhi, etc. for different purposes. Besides, the council has collaboration with numerous leading institutions for conducting research under Expression of Interest Scheme.

### **Information, Education & Communication (IEC)**

The CCRUM is actively engaged in Information, Education & Communication (IEC) activities for the propagation and promotion of Unani Medicine at national and international levels. The activities focus on creation of awareness among the masses about the efficacy, cost-effectiveness and availability of herbs used for prevention and treatment of diseases, dissemination of outcomes of research and development in Unani Medicine, facilitating scientific platform for deliberation on validation and evaluation of existing knowledge of Unani Medicine and discussion on finding solutions for new and emerging health challenges. The activities also aim at training and research skill development of researchers.

The IEC activities include organization of national and international seminars, conferences, symposia, workshops, brainstorming sessions, lectures, etc. on various aspects of Unani Medicine. Besides, the CCRUM researchers are encouraged and facilitated to participate in seminars, conferences, symposia, workshops, brainstorming sessions, lectures organized by other scientific and academic organizations.



*Shri Pramod Kumar Pathak, Additional Secretary, Ministry of AYUSH, Dr. Shashi Bala Singh, Director, NIPER, Hyderabad, Padmashri Dr. M.A. Waheed, Chairman, UPC, Prof. Asim Ali Khan, Director General, CCRUM, Dr. K.S. Kardam, Sr. Joint Director of Patents and Designs, IPO and Dr. Munawwar H. Kazmi, Deputy Director, NRIUMSD, Hyderabad during National Seminar on IPR on 20<sup>th</sup> August, 2018 in Hyderabad*

The CCRUM also participates in Arogya fairs/expos organized by the Ministry of AYUSH, Government of India in collaboration with state governments and other stakeholders. During these events, the CCRUM showcases its progress in clinical research, drug standardization, survey and cultivation of medicinal plants, and literary research. Posters and charts highlighting various concepts of Unani Medicine and important publications of the council are put on display. IEC materials on healthy living and intervention of Unani Medicine in promoting health and curing diseases are distributed among the visitors. The Council also deploys its physicians to provide free consultation and treatment

to the ailing visitors seeking Unani treatment. Public lectures on various health issues are also delivered by the council's researchers. Besides, the council organizes lectures and distributes IEC materials in health camps and mobile clinics under its different research and health outreach programmes.

### Publication

One of the key objectives of the CCRUM is 'To prepare, print, publish and exhibit any papers, posters, pamphlets, periodicals and books for furtherance of the objectives of the Council and to contribute to such literature'. To realize this objective, the council publishes various periodical and non-periodical publications and IEC materials for dissemination of research outcomes, propagation of Unani Medicine, creation of health awareness, etc.

The non-periodical publications include books, monographs, technical reports, training manuals and IEC materials like posters, translites, flyers, leaflets, brochures, booklets and audio-visual contents in Hindi, English, Urdu, Persian, Arabic and other regional and foreign languages. The books, monographs and technical reports are mainly outcomes of the council's research programmes, namely clinical research, survey and cultivation of medicinal plants, drug standardization and literary research. The literary publications include new compilations as well as translation, reproduction and reprinting of classical books and treatises of Unani Medicine.

The periodical publications include Hippocratic Journal of Unani Medicine (HJUM), *Jahan-e-Tib* and CCRUM Newsletter. HJUM is a peer-reviewed journal started as a half-yearly journal in 2006, but later made quarterly in 2008 and since then it has been published regularly. *Jahan-e-Tib* is a scientific quarterly journal in Urdu language started in July 1999. Both the journals cover papers on clinical research on single and compound Unani drugs, validation of regimen therapy, experimental pharmacological studies, standardization of single and compound drugs, development of standard operating procedures, ethnobotanical studies and development of agro-techniques thereof, and literary research on classics of Unani Medicine. The journals are also open for studies on safety evaluation of Unani and other herbo-mineral drugs, nutraceuticals, cosmotherapeutics, aromatics, oral health, lifestyle disorders and other contemporary areas which are the outcome of modern day living. Besides regular issues, *Jahan-e-Tib* has published various special issues on topics of considerable importance including

‘Dietotherapy’, ‘Mother and Child Health’ and ‘Rhazes’ as well as ‘Avicenna’ and others. The CCRUM Newsletter is a quarterly official bulletin and is published bilingually in Hindi and English primarily containing news about the works and activities of the CCRUM.

## Unani Day Celebration

The Ministry of AYUSH, Government of India took a milestone decision in 2016 by declaring 11<sup>th</sup> February, the birthday of *Hakim Ajmal Khan* - a versatile genius, educationist, philanthropist, freedom fighter and founder of scientific research in Unani Medicine - as Unani Day. The official ceremonies of first Unani Day were held at Hyderabad in the premises of Central Research Institute of Unani Medicine on 11<sup>th</sup> February 2017. Two days ‘National Seminar on Skin Diseases and Cosmetology in Unani Medicine’ was also organized as part of the celebration. The celebrations of second and third ‘Unani Day’ were held at New Delhi in 2018 and 2019 with organization of an International conference in 2018 and a National conference in 2019. The 2018 version of ‘Unani Day’



*Dr. Najma Heptulla, Hon'ble Governor, Manipur, Shri Mukhtar Abbas Naqvi, Hon'ble Minister for Minority Affairs, Shri Shripad Yesso Naik, Hon'ble Minister of State (IC) for AYUSH, Dr. Jitendra Singh, Hon'ble Minister of State (IC) for the Development of North Eastern Region, Vaidya Rajesh Kotecha, Secretary, Ministry of AYUSH, Shri Pramod Kumar Pathak, Additional Secretary, Ministry of AYUSH, Prof. Seyed Ehtesham Hasnain, Vice Chancellor, Jamia Hamdard, Dr. Mohd. Tahir, Advisor (Unani), Ministry of AYUSH and Prof. Asim Ali Khan, Director General, CCRUM during Unani Day Celebration on 11 February, 2019 in New Delhi*

also marked the 150<sup>th</sup> birthday of *Hakīm Ajmal Khan*. A good number of delegates and resource persons from the country and abroad including experts from Bahrain, Bangladesh, China, Hungary, Israel, Portugal, Slovenia, South Africa, Sri Lanka, United Arab Emirates, United Kingdom and United States of America attended the conference.

On occasion of 3<sup>rd</sup> Unani Day celebrated in 2019, a two day ‘National Conference on Unani Medicine for Public Health’ was organized in which more than 1300 delegates from all corners of the country and a few from abroad participated. The conference had several scientific sessions that elaborated the potential of Unani Medicine in public health.

The highlight of the Unani Day Celebration is the conferment of AYUSH awards on academicians and researchers in the country and abroad for their outstanding contributions in the field of Unani Medicine (*Tibb*). The awards include; Young Scientist Award, Best Research Paper Award and Best Teacher in the categories of clinical research, literary research and drug research. The Lifetime Achievement Award is conferred on Best Practitioner, Best Researcher and Best Academician.

## Centres of Excellence

Given the growing consumer acceptance of AYUSH in the domestic and global society as an important component of pluralistic systems of healthcare, the Government of India decided to identify reputed AYUSH knowledge institutions in non-governmental / private sector and to support and upgrade their functions and facilities to the level of excellence. Under the Central Sector Scheme – Centre of Excellence – the erstwhile Department of AYUSH provided financial assistance to upgrade the following institutions to Centres of Excellence in Unani System:

- Ibn Sina Academy of Medieval Medicine & Sciences, a museum of medico- historical research in Aligarh, Uttar Pradesh
- Centre for Unani Ilaj Bit Tadbeer (Regimenal Therapy), Chennai, Tamil Nadu
- Dr. Ahmed Ashraf Memorial Unani Specialty Treatment Centre for Paralysis (Falij), Hyderabad, Andhra Pradesh

- Shamim Ahmed Saeedi Unani Speciality Hospital for Waja-ul-Mafasil (Joint Pain), Deoband, Uttar Pradesh

## AYUSH Research Portal

The AYUSH Research Portal is a web portal meant for disseminating scientific and research data on AYUSH systems and the current research activities taking place across the globe. The portal contains different search engines for the convenience of the users. The information can be searched by advanced search options including simple search, search with AYUSH terminology, title and author's name. It strives to further the cause of inculcating scientific temperament, quality of research, education and training in AYUSH domain. The portal has about 2,500 research papers already published in various national and international journals.

## AYUSH Grid

The Ministry of AYUSH, responding to 'Digital India' launched by the Government of India in 2015, conceptualized 'AYUSH GRID' project for digitizing AYUSH healthcare delivery at all levels: research, education, schemes and various health programs. The AYUSH GRID is actually the integration of Information Technology (IT) projects exclusively meant for improvement and facilitation of AYUSH pan India. It enables AYUSH systems to get on-board in healthcare IT implementation projects. Further, the AYUSH GRID accommodates all the IT projects under one umbrella.

The AYUSH Hospital Management Information System (A-HMIS) is an important element of 'AYUSH GRID' project and a comprehensive IT platform to effectively manage all the functions of health care delivery systems and patient care in AYUSH establishments. It facilitates effective clinical documentation and data management, dual coding (ICD 10 and National AYUSH Morbidity Code), capturing and managing full range of data, state-of-the-art report generation, getting the NABH and NABL accreditation, etc. In the first phase, the A-HMIS has been launched in the teaching and research hospitals of the national institutes and research councils under the Ministry of AYUSH, Government of India in 2018. The CCRUM has implemented A-HMIS in its peripheral institutes and provided IT training to the nodal officers.

The Ministry of AYUSH is in the process of setting up a nationwide ‘AYUSH Grid’ connecting all hospitals and laboratories so that case histories and observations can be collated to generate evidences about the efficacy of the traditional systems of medicine.

The National AYUSH Morbidity and Standardized Terminologies Electronic Portal (NAMSTE- Portal) is a pioneer component of AYUSH GRID launched by the Ministry of AYUSH in 2017 with the vision to develop a comprehensive web portal on AYUSH morbidity codes, inter linkage with WHO–ICD 10/11, standardized terminologies of all the AYUSH systems and Electronic Health Records (EHR) system for detailed data collection. Another aspect of this portal is to report clinical data electronically by individual institute. The Ministry of AYUSH is gradually moving towards adopting EHR which has worldwide acceptance in medical record management.

## AYUSH Social Media

The National Health Policy 2017 lays stress on leveraging digital tools for AYUSH through its statement “Digital tools would be used for generation and sharing of information about AYUSH services and AYUSH practitioners, for traditional community level healthcare providers and for household level preventive, promotive and curative practices”.



*Shri P.N. Ranjit Kumar, Joint Secretary, Ministry of AYUSH with AYUSH professionals during a workshop on social media on 15<sup>th</sup> January 2018 in New Delhi*

In line with the above, the Ministry of AYUSH took different initiatives to create a pool of AYUSH students and professionals to reach out to the masses through social media platforms. The Ministry has trained a group of AYUSH professionals including those from Unani stream for creating contents and writing blogs for various social media platforms.

The group of trained Unani professionals is contributing to AYUSH-Unani Facebook page, blogs and Twitter handle.

## Pharmaceutics and Industry

The Unani drug industry manufactures and markets two types of drugs, viz. classical Unani formulations, and patent and proprietary products. Good Manufacturing Practices (GMP) are adhered to in order to ensure quality control of the drugs.

## Standardization and Quality Control

The Government of India has taken several steps to monitor quality standards of Unani drugs and introduced GMP under Schedule 'T' of the Drugs and Cosmetics Act, 1940. The Act regulates manufacturing and marketing of Unani drugs, it also ensures that raw materials used in the manufacturing of drugs are authentic as per prescribed standards. In 2009, the then Department of AYUSH in collaboration with Quality Council of India (QCI) developed a scheme for certification of quality assurance in AYUSH products. National Accreditation Board for Hospitals & Healthcare Providers (NABH) is a constituent board of Quality Council of India set up to establish and operate accreditation programme for healthcare organizations. Similarly, National Accreditation Board for Testing and Calibration Laboratories (NABL) has been established by the Department of Science and Technology, Government of India. The laboratories so accredited are approved for quality testing of Unani drugs.

## Pharmacopoeia Commission for Indian Medicine & Homeopathy

The Pharmacopoeia Commission for Indian Medicine & Homeopathy (PCIM&H) was established by the Government of India in 2010. It aims to develop pharmacopoeial standards for Unani, Ayurveda, Siddha and Homeopathy

drugs and to publish Pharmacopoeia of India of each system for the promotion of quality and safety of their drugs. The PCIM&H has a Unani Pharmacopoeia Committee (UPC) for the development of pharmacopoeial standards of Unani drugs. The Pharmacopoeial Laboratory for Indian Medicine (PLIM) is the supporting structure of the PCIM&H housing the Pharmacopoeial Standards Setting-cum-Drugs Testing Laboratory at national level.

The CCRUM is the secretariat for the UPC. Many volumes of National Formulary of Unani Medicine and Unani Pharmacopoeia of India have already been published. Though Unani System is practiced in many countries, India is the global leader in the field of developing pharmacopoeial standards of Unani drugs.

## Drug Regulation and Licensing

The manufacture of Unani drugs is regulated through Drugs and Cosmetics Act, 1940, as amended from time to time. India is one of the major worldwide exporters of raw medicinal and aromatic plants and processed plant-based drugs. The Government of India has been taking various initiatives to improve the standard of herbal drugs and promote the drug industry by implementing certain Acts and Rules in consonance with the global standards for natural products. The Government of India, as per the provisions of Drugs & Cosmetics Act, 1940, has set up an advisory body of experts and representatives from different stakeholders called 'Ayurveda, Siddha, Unani Drugs Technical Advisory Board (ASUDTAB)' with the mandate to advise and provide recommendations on regulatory issues of ASU drugs. There is a significant representation of Unani Medicine in the board to take care of affairs related to Unani drugs.

Presently, there are 625 licensed pharmacies manufacturing Unani drugs in the country. Unani Drug Manufacturers Association (UDMA) has been recently set up with representations from various Unani drug manufacturing units / industry. Some renowned Unani pharmacies are as follows:

- Hamdard (Wakf) Laboratories, Delhi
- Dawakhana Tibbiya College, Aligarh, Uttar Pradesh
- Indian Medicines Pharmaceutical Corporation Limited (IMPCL), Ramnagar, Uttarakhand

## Essential Drugs List

In the endeavour of promoting health equity and facilitating smooth procurement of medicines by the central and state health agencies, Essential Drugs List (EDL) was published by the then Department of AYUSH in 2008, which was later updated and revised in 2013. The medicines for Unani EDL have been selected on the basis of their effectiveness in primary healthcare, safety, availability, and cost-effectiveness. Careful selection of essential medicines with a limited range has been done to provide a higher quality of patient care, better management of medicines and cost-effective utilization of health resources. The Unani EDL contains 288 generic medicines including 213 multi-ingredient formulations and 75 single drugs taken from authoritative texts, national pharmacopoeia and formulary of Unani Medicine.

## Major Milestones of Unani Medicine

Unani Medicine (*Tibb*), in its journey spanning over several millennia, traversed through most of the geographical regions of the civilized world in the ancient and medieval periods before finding a permanent home in India. During its long journey, the system got enriched by imbibing the best available health and healing sciences and practices in those countries. Thus, the scholars of different times and regions made significant contributions to the further advancement of this system. In the course of history, the emperors, rulers and governments also played vital role in the growth of Unani Medicine by establishing institutions and hospitals, patronizing physicians and framing regulations and guidelines. The overall efforts and contributions made for the growth and development of Unani Medicine over the millennia left numerous illuminating imprints that may be regarded as ‘Milestones of Unani Medicine’.

5000 BC	Use of medicinal plants by Egyptians as recorded in the Papyri
3000 BC	Medical writings by Mesopotamian physicians
3000 BC	Establishment of some medical schools in Egypt like Heliopolis, Sais, Memphis, Thebes and Abydos Medical Schools
3000 BC	Morphological study of the sheep's liver in Mesopotamia
1800 BC	Kahun Papyrus dealing with women's health and gynaecological disorders
1600 BC	Edwin Smith Papyrus carrying descriptions of 48 surgical cases
1552 BC	Berlin Papyrus dealing with medical and surgical cases
1300 BC	Hearst Medical Papyrus dealing with general ailments

1200 BC	Initiation of experimental method to study diseases and their treatment by Asclepius and his descendants
580-489 BC	Pythagoras introduced the four proximate qualities – hot, cold, wet and dry and described the crisis period of diseases
500 BC	Discovery of the first antidote by Asclepius II
490-430 BC	Concept of four elements by Empedocles
460 BC	Concept of atomism by Democritus
460-370 BC	Concept of four humours ( <i>Akhlāt</i> ) and medical ethics by Hippocrates
384-322 BC	Comparative study of anatomy and establishment of Lyceum Academy by Aristotle
370-287 BC	Theophrastus founded a herbal medical museum
322-283 BC	Alexandria's museum, library and medical faculty were founded
310 BC	Erasistratus dissected human bodies and founded human physiology
305 BC	Herophilus (father of anatomy) dissected a large number of human dead bodies
1 <sup>st</sup> Century AD	Compilation of illustrated book “De Materia Medica ( <i>Kitāb al-Hashā'ish</i> )” consisting of 600 drugs by Dioscorides
200 AD	Organization of Unani Medicine by Galen
400-500 AD	Establishment of Academy of Jundishapur, Iran
737-831 AD	Development of pharmaceutical chemistry by Geber
750-850 AD	Translation of Greek medical texts into Arabic
800 AD	Establishment of <i>Bayt al-Hikma</i> (House of Wisdom), Baghdad for translation and compilation of works related to Unani Medicine
800 AD	Introduction of Unani Medicine ( <i>Ṭibb</i> ) in India

865-925 AD	Description of infectious diseases by <i>Muḥammad ibn Zakariyyā Rāzī</i>
936-1013 AD	Invention and description of surgical instruments by <i>Abu'l Qāsim Zahrāwī</i> in his book, <i>Kitāb al-Taṣrīf</i>
980-1037 AD	Compilation of an encyclopedia of Unani Medicine Canon of Medicine ( <i>Al-Qānūn fi'l-Ṭibb</i> ) by <i>Ibn Sīnā</i>
1200-1526 AD	Development of Unani Medicine in India during the Sultanate period
1526-1857 AD	Development of Unani Medicine in India during the Mughal period
1595 AD	Establishment of <i>Dār al-Shifā'</i> , the first Unani teaching hospital of Deccan founded by <i>Sulṭān Muḥammad Qulī Qutub Shāh</i>
1865 AD	Initiation of a course on Unani Medicine by Punjab University
1891 AD	Establishment of <i>Madrasa Ṭibbiyya</i> , Hyderabad founded by <i>Navāb Mīr Maḥbūb 'Alī Khān Āṣif Jāh VI</i>
1904 AD	Establishment of <i>Hindostani Dawakhana</i> – a manufacturing unit of Unani Medicine in Delhi
1906 AD	Establishment of All India Ayurvedic and Unani Tibbi Conference by <i>Ḥakīm Ajmal Khan</i>
1909 AD	Establishment of Girls Tibbi School ( <i>Madrasa Ṭibbiyya Zanana</i> ) by <i>Ḥakīm Ajmal Khan</i>
1920 AD	Resolution of All India Congress Committee for Promotion/ Official Patronage of Indian Systems of Medicine (Ayurveda and Unani)
1921 AD	Inauguration of Ayurvedic & Unani Tibbia College, Delhi by Mahatma Gandhi
1926 AD	Establishment of Research Committee and Research Unit at Ayurvedic & Unani Tibbia College, Delhi

1927 AD	Establishment of Ajmal Khan Ṭibbiya College, Aligarh Muslim University, Aligarh with five years degree programme of Unani Medicine
1935 AD	Establishment of the Department of Unani Medicine ( <i>Maḥkama Ṭabābat Yūnānī</i> ) in the State of Hyderabad by <i>Mīr ‘Uthmān ‘Alī Khān, Nizām VII</i>
1962 AD	Establishment of the Institute of History of Medicine & Medical Research, New Delhi
1964 AD	Setting up of Unani Pharmacopoeia Committee by Government of India
1969 AD	Establishment of the Central Council for Research in Indian Medicine and Homoeopathy
1970 AD	Setting up of Pharmacopoeial Laboratory for Indian Medicine
1971 AD	Enforcement of Indian Medicine Central Council Act, 1970, and establishment of CCIM
1972 AD	Initiation of postgraduate education in Unani Medicine at Ajmal Khan Ṭibbiya College, AMU, Aligarh and Government Nizamia Ṭibbi College, Hyderabad
1978 AD	Establishment of the Central Council for Research in Unani Medicine, New Delhi
1983 AD	Incorporation of Chapter IV-A with separate regulatory provisions for Ayurveda, Siddha and Unani Medicine in the Drugs and Cosmetics Act, 1940 and rules thereunder
1983 AD	Setting up of Indian Medicines Pharmaceutical Corporation Limited
1995 AD	Setting up of Department of Indian Systems of Medicine & Homoeopathy (ISM&H) in Union Ministry of Health & Family Welfare
2000 AD	Establishment of National Medicinal Plants Board

2003 AD	Constitution of Task Force for Unani Traditional Knowledge Digital Library (TKDL) and Launching of TKDL (Unani)
2003 AD	Renaming of Department of Indian Systems of Medicine & Homoeopathy (ISM&H) as Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)
2004 AD	Establishment of National Institute of Unani Medicine, Bengaluru
2005 AD	Mainstreaming of AYUSH strategy adopted under the National Rural Health Mission (NRHM)
2010 AD	Establishment of Pharmacopoeia Commission for Indian Medicine
2011 AD	Setting up of academic chair in Unani Medicine at the University of Western Cape, South Africa
2014 AD	Elevation of the Department of AYUSH to the Ministry of AYUSH
2016 AD	Declaration of 11 <sup>th</sup> February as Unani Day by the Government of India
2019 AD	Setting up of academic chair in Unani Medicine at Hamdard University, Bangladesh
2019 AD	Foundation of National Institute of Unani Medicine at Ghaziabad, Uttar Pradesh
2019 AD	Upgradation and redesignation of CRIUM, Hyderabad to National Research Institute of Unani Medicine for Skin Disorders

## Globalization of Unani Medicine

Unani Medicine (*Tibb*) is popular in different parts of the world with different names. It is known as Unani Medicine or *Unani Tibb* in India, Bangladesh, Sri Lanka and South Africa; as *Tibb* (Persian Traditional Medicine) in Iran; as Eastern Medicine in Pakistan; and as Uyghur Medicine in China. In some countries, it is also known as *Tibb Sunnatī*, Islamic Medicine or Arab Medicine.

Unani Medicine has institutional framework in some Asian countries, namely Bangladesh, Sri Lanka and Pakistan. In South Africa, the School of Natural Medicine, Faculty of Community and Health Sciences, University of Western Cape offers a four-year degree course in *Unani Tibb*. In Iran, Unani Medicine is practiced as Traditional Medical System, and the Government is keenly interested in its revival and development and has initiated a number of programmes for this purpose. There is Traditional Medicine and Materia Medica Research Center established at Shaheed Beheshti Medical University, Tehran. In Malaysia, Unani Medicine is recognized and practiced under Traditional Indian Medicine. In Kuwait, Unani Medicine is practiced as Islamic Medicine and an Islamic Medicine Center is also established. In the United Arab Emirates (UAE), practice of Unani Medicine is allowed officially after qualifying the examination of Traditional Complementary and Alternative Medicine (TCAM) conducted by the Ministry of Health, Government of UAE.

### Initiatives of Government of India

The advent of new millennium has witnessed renewed interest in traditional systems of medicine including Unani Medicine within India and abroad. In recent years, the global demand of natural/herbal medicines has increased the scope of international exchange of Unani Medicine related information and cooperation with other countries for collaborative efforts in its development. The

Ministry promotes the Unani Medicine through its International Cooperation Scheme and facilitates the following:

- i. International exchange of experts and officers
- ii. Creation of fellowships for foreign nationals interested in studying Unani Medicine (*Tibb*).
- iii. Incentive to drug manufacturers, entrepreneurs and institutions for international propagation of AYUSH and registration of products for exports
- iv. Support for international market development and promotional activities
- v. Translation and publication of AYUSH books in foreign languages
- vi. Establishment of AYUSH information cells / health centres in Indian Embassies, Missions and cultural centres in foreign countries and deputation of experts

A Unani Chair was set up at the School of Natural Medicine, University of Western Cape, South Africa in 2011 and a professor from India was deputed there to help promote the Unani Medicine. An MoU between CCRUM and Hamdard University, Bangladesh was signed in 2018 with the objective of setting up a Unani Chair at the University. An MoU for cooperation in Unani Medicine was signed between the CCRUM and Avicenna Tajik State Medical University (ATSMU), Tajikistan in 2018. This historical agreement has been one of the nine agreements signed between the Government of India and Tajikistan during the visit of the Hon'ble President of India Shri Ram Nath Kovind to Tajikistan in October, 2018. The MoU binds both the sides for joint research, International collaborations, education, and training in the areas of mutual interest.

Besides, the CCRUM, under the guidance of the Ministry of AYUSH, is engaged in fruitful dialogues with countries like Iran, China, USA, UK, Israel, Greece, Sri Lanka etc for exploring areas of mutual interests in the field of Unani Medicine.

Iran is emerging as an important collaborator to India in the field of Unani Medicine as the country shares historical roots of the system as well. In the

year 2018, a high-level delegation from the Government of India visited Iran and aimed at forging executive steps and action plan in pursuance to the MoU signed between the Ministry of AYUSH, Government of India and the Ministry of Health and Medical Education, Islamic Republic of Iran. The MoU meant for collaboration in the area of education and research in Traditional Medicine. Both the sides agreed upon academic cooperation exchange of experts, knowledge, experiences and resources; exploring possibility for reciprocal approval of traditional medicines and pharmacopoeias, conducting joint training courses and organizing conferences on traditional medicine in India and Iran.

### Traditional Knowledge Digital Library (TKDL)

To prevent misappropriation of India's rich heritage of traditional medical knowledge, TKDL collaborative project of the erstwhile Department of Indian System of Medicine and Homeopathy (ISM&H) and the Council of Scientific and Industrial Research (CSIR) was launched through National Institute of Science Communication and Information Resources (NISCAIR) in 2003. The Central Council for Research in Unani Medicine was entrusted to coordinate the development of TKDL for Unani Medicine. Since, the traditional knowledge of Unani Medicine exists mainly in Arabic and Persian languages and was not understood by Patent Examiners in the International Patent Office's (IPOs), the TKDL acts as a bridge between the local languages and the International Patent Examiners. For creation of the TKDL database, a classification tool, called the Traditional Knowledge Resource Classification (TKRC) was created. This tool enables the data entry into the software using Unicode and helps the Patent examiners in data retrieval since concordance has been developed between TKRC and International Patent Classification (IPC). As on date more than 2,30,000 Unani formulations are included in the Traditional Knowledge Digital Library from classical literature.

### Initiatives of World Health Organization

The World Health Organization's (WHO) efforts and strategies for strengthening primary healthcare have played an instrumental role in the development of traditional medicine across the globe. With Alma Ata declaration of 1978 to achieve the goal of 'Health for All' involving traditional medicine and its practitioners in primary healthcare delivery, policies and strategic interventions

were designed to facilitate peoples' access to healthcare through traditional medicine, and WHO supported these initiatives in member countries with publication of technical documents and guidelines. A number of World Health Assembly resolutions are aimed at scientific development of traditional medicine and medicinal plants for their best use in the healthcare of the populations. These developments equally impacted Unani Medicine and under the series of benchmark documents for training in traditional/complementary and alternative medicine, WHO published 'Benchmarks for Training in Unani Medicine' in 2010.

The document contains training modules for Unani Medicine practitioners to help uniform development of Unani Medicine education in different countries.

The WHO is also in the process of developing 'Benchmarks of Practice in Unani medicine' as part of its global strategy to strengthen the quality, safety and effectiveness of Traditional and Complementary Medicine (T&CM). Development of this benchmark document is included in the Project Collaboration Agreement (PCA) signed between WHO and the Ministry of AYUSH, Government of India on Cooperation in the field of Traditional and Complementary Medicine. This document will serve as an international benchmark for practice of Unani medicine and will provide a reference to national authorities to establish/strengthen regulatory standards for practice of Unani medicine and assure patient safety. The task of revising the 'Benchmarks for Training in Unani medicine' incorporating more detail has also been taken up by the WHO involving all stakeholder countries under this Project Collaboration Agreement.

Development of International standardized terminologies of Unani Medicine is another important initiative taken up by WHO. The standardisation of terms will help facilitate better communication between practitioners of modern and Unani medicine, and will support its integration into the national health system. The document is expected to provide: list of terms, their definitions including contextual meanings of terms, classical usage of the terms with references to the definitions, suggested English terms, synonyms, and exclusions to the meanings of the term in the medical context. The document will cover terms related to basic principles, human structure and function, diagnosis, pathologies, pharmacognosy, pharmacology, preparation of food and medicines, therapeutics, and preventive and health promotion interventions.

## Bibliography

- Khān MA. *Iksīr-i-A'zam*. Lucknow: Maṭba' Munshī Naval Kishore; 1883
- Khān MA. *Muḥīt-i-A'zam*, Kanpur: Maṭba' Nizāmī; 1897
- Anonymous. National Formulary of Unani Medicine Part-I-VI. New Delhi: Central Council for Research in Unani Medicine; 2001-2006
- Anonymous. Unani Pharmacopoeia of India, Part – I-VI. New Delhi: Central Council for Research in Unani Medicine; 1995-2011
- Anonymous. Essential Drugs List (EDL) Unani Medicine. New Delhi: Department of AYUSH, Ministry of Health and Family Welfare, Government of India; 2013
- Anonymous. Good Clinical Practice Guidelines for Clinical Trials in Ayurveda, Siddha and Unani Medicine (GCU – ASU). New Delhi: Department of AYUSH, Ministry of Health and Family Welfare, Government of India; 2013
- Anonymous. Proceedings of International Conference on Unani Medicine. New Delhi : Central Council for Research in Unani Medicine; 2007
- Anonymous. Scientific Validation of Unani Drugs. New Delhi: Central Council for Research in Unani Medicine; 2009
- Arzānī MA. *Ṭibb-i-Akbar*. Kanpur: Maṭba' Munshī Naval Kishore; 1875
- 'Azmi AA. Basic Concepts of Unani Medicine. New Delhi: Jamia Hamdard; 1995
- Cameron GO. The Treatise on the Canon of Medicine. London: Luzac and Co. 46, Great Russell, WCI; 1930
- Ibn al-Quff. *Kitāb al-'Umda fi'l Jaraḥat*, Vol. I-II. Hyderabad: Dā'ira al-Ma'ārif al-Uthmāniyya; 1937

- Ibn Rushd. *Kitāb al-Kulliyāt*. New Delhi: Central Council for Research in Unani Medicine; 1984
- Ibn Sīnā. *Al-Qānūn fi'l Ṭibb*, Vol. I. New Delhi: Institute of History of Medicine and Medical Research; 1981
- Khan MI. *Qanun-i-'Aṣrī*. Delhi: Barqī Press; 1931
- Kabīr al-Dīn M. *Bayād-i-Kabīr*. Hyderabad: Daftar al-Masīh'; 1921
- Kabīr al-Dīn M. *Ifāda-i-Kabīr Mufaṣṣal*. Hyderabad: National Fine Printing Press; 1970
- Zahrāwī AQ. *Kitāb al-Taṣrīf li man 'Ajiza 'an al-Ta'lif*. Lucknow: Maṭba' Nāmī; 1908

## Webliography

- [www.indianmedicine.nic.in](http://www.indianmedicine.nic.in) : Ministry of AYUSH, Government of India
- <http://ayushportal.nic.in/> : AYUSH Research Portal
- <https://mohfw.gov.in/> : Ministry of Health & Family Welfare, Government of India
- <https://ccrum.res.in/> : Central Council for Research in Unani Medicine, New Delhi, India
- <https://www.ccimindia.org/> : Central Council of Indian Medicine, New Delhi, India
- <https://nrhm-mis.nic.in/> : National Rural Health Mission (NRHM), Ministry of Health & Family Welfare, Government of India
- <https://www.facebook.com/ayushunani/> : AYUSH-Unani Social Media
- <http://namstp.ayush.gov.in> : National AYUSH Morbidity and Standardized Terminologies Electronic Portal (NAMASTE - Portal)
- <https://www.nmpb.nic.in/> : National Medicinal Plants Board, New Delhi, India
- <https://www.iiim.res.in/> : Indian Institute of Integrative Medicine, Jammu (Council of Scientific and Industrial Research, Govt. of India)
- <https://pharmacy.olemiss.edu/ncnpr/> : National Centre for Natural Products Research, University of Mississippi

- <http://www.nium.in/> : National Institute of Unani Medicine, Bengaluru, India
- <https://www.amu.ac.in/deansoffaculty.jsp> : Faculty of Unani Medicine, Aligarh Muslim University, Aligarh, India
- <http://jamiahamdard.edu/> : Faculty of Medicine (Unani), Jamia Hamdard, New Delhi, India
- <https://www.jmi.ac.in/> : Jamia Millia Islamia, New Delhi, India
- <http://www.kashmiruniversity.net/AboutUoK.aspx> : University of Kashmir, Srinagar, Jammu and Kashmir, India
- <http://knruhs.telangana.gov.in/> : Kaloji Narayana Rao University of Health Sciences Telangana State, Warangal, India
- <https://pcimh.gov.in/> : Pharmacopoeia Commission for Indian Medicine & Homoeopathy, Ministry of AYUSH, Government of India
- [https://www.nhp.gov.in/ayush\\_ms](https://www.nhp.gov.in/ayush_ms) : National Health portal of India AYUSH
- <https://ehr.ayush.gov.in/ayush/#&panell-3> : AYUSH Hospital Management Information System (A-HMIS), Ministry of AYUSH, Government of India
- [https://cdsco.gov.in/opencms/opencms/en/Traditional\\_Drugs/](https://cdsco.gov.in/opencms/opencms/en/Traditional_Drugs/) : Central Drugs Standard Control Organization Directorate General of Health Services, Ministry of Health & Family Welfare, Government of India
- <https://nabh.co/>: National Accreditation Board for Hospitals and Healthcare Providers, Laboratories, New Delhi, India
- <https://nabl-india.org/> : National Accreditation Board for Testing and Calibration, Gurugram , Haryana, India
- [https://www.nmpb.nic.in/asu\\_manufactures](https://www.nmpb.nic.in/asu_manufactures) : National Medicinal Plants Board, Ministry of AYUSH, Government of India