सत्यमेव जयते

HomoeOpathy

SCIENCE OF GENTLE HEALING

2015

Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)

Ministry of AYUSH, Government of India, New Delhi

www.indianmedicine.nic.in

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Foreword

With a view to furthering its motto of spreading the message of holistic health through Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) systems, Ministry of AYUSH had planned a series of dedicated publications with the aim to compile the status, strength and achievements of AYUSH systems. Homoeopathy - the Science of Gentle Healing, first printed in 2013, was an outcome of this initiative.

2. This publication comprises within itself a bird's eye view of Homoeopathy, starting from a brief introduction to the science, to its network, infrastructure and status in various parts of the world, with special emphasis to India. The most useful part of the book is, perhaps, the compendium of all the research work that have taken place in India, and especially, at the Central Council for Research in Homoeopathy, a body exclusively dedicated to research in Homoeopathy, along with their outcomes and evidence levels.

3. The Government of India is keen to enhance the accessibility of AYUSH systems for the citizens of the country, especially at healthcare centres. On one side, the Government has recently designated an independent Ministry for promotion and development of AYUSH systems and on the other side, it is ensuring adequate measures to facilitate scientific developments of these systems through advance research projects. Homoeopathy, known to cure maladies permanently and safely for over two hundred years, is a very popular system widely used by the people of India. The support and contribution of the Government of India in successful establishment and institutionalization of this system in India has been tremendous. The Ministry of AYUSH aims at imparting further momentum to the ongoing gamut of activities in the field of Homoeopathy through its promotive strategies and exploration of wider research opportunities.

4. Belonging to a Ministry dedicated solely to the cause and needs of AYUSH systems, I am more than delighted to present to you this revised edition of this useful publication, which caters to varying kinds of readers, ranging from policymakers, researchers, physicians, teachers, etc. to even the common man having interest in this field.

(Nilanjan Sanyal)
Secretary

24th July, 2015

PREFACE

This revised edition of our prestigious dossier on 'Homoeopathy – Science of Gentle Healing', being published after a gap of merely two years, has been developed keeping in view the need of updating the content, which is being largely referred to by the stakeholders of Homoeopathy.

The most suitable way for a medical system to grow is evidence-based research and simultaneous infrastructural and political growth. These dimensions of Homoeopathy are being very well professed and nurtured by Ministry of AYUSH, that came into being recently as a Government of India initiative to promote AYUSH systems. With improving infrastructure and gradually widening accessibility, Homoeopathy has taken the road to progress, and with allocation of independent Ministry, the doability of the homoeopathic organisations has increased multifold. In the recent past, Council has been able to design and implement various national health programmes like Homoeopathy in Rashtriya Bal Swasthya Karyakram and National Programme for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke. This has certainly widened the platform for Homoeopathy, which Council is striving to convert into equally fruitful results.

This second edition entails a brief on Homoeopathy, principles and scope of the system, updated information on its institutional framework, status in India and abroad, research and development, drug development and regulation, education and practice, a list of Council's publications and links to important websites.

I hope this publication will be read as widely as its preceding one and would serve the purpose of promotion and awareness of various aspects of Homoeopathy to even a greater extent.

(R. K. Manchanda)

Director General

20th July 2015

PREFACE TO FIRST EDITION

Homoeopathy in India is recognised and officially integrated in the delivery of healthcare services. The Government of India has made sustained efforts for growth and development of Homoeopathy along with the traditional medical systems, i.e., Ayurveda, Yoga & Naturopathy, Unani, Siddha, Sowa Rigpa & Homoeopathy (collectively identified by acronym AYUSH). A highly commendable infrastructure in the form of 185 medical colleges with regulatory mechanism for quality university education, autonomous research council with 32 institutes and units 224,279 registered medical practitioners, drug safety regulations with 414 drug manufacturing units, has been established in the country. This framework has given an impetus to Homoeopathy, and the system has been established in the country both in the public and the private sector, like nowhere else in the world.

India has a globally acknowledged footprint in Homoeopathy and has hosted four World Congresses of the Liga Medicorum Homoeopathica Internationalis (LMHI), an international homoeopathic medical official forum, the last of which was in 2011. A recent initiative of the Department of AYUSH is to support the establishment of chairs of AYUSH systems including Homoeopathy in educational universities abroad to encourage academic leadership and foster research, teaching and policy development of Homoeopathy in the host country.

A document describing the strategic position of India in the field of Homoeopathy is, therefore, of critical value. This document is a compendium of the infrastructural strengths and also offers a glimpse of the vast scope of homoeopathic research in various fields, such as clinical, drug and basic research in India. The readers will have an overview of the successful institutionalization of Homoeopathy in the country, which has the potential to serve as a model for other countries to replicate and offer a template for collaboration in research and education.

We are thankful to Shri Anil Kumar, Secretary, Department of AYUSH for his guidance and visionary leadership. This document has been made feasible with his skilled directions and supervision. We are also grateful to Shri Bala Prasad, Joint Secretary, Department of AYUSH for being a source of encouragement and support throughout the making of this document. We are also grateful to all the contributors, reviewers and experts for their suggestion & critical evaluation. The subject is so vast that there can be inadvertent errors and omissions in spite of the best of efforts. We welcome feedback from all our esteemed readers for updating the document from time to time.

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1st January 2013

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ABBREVIATIONS

AYUSH	Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homœopathy
BHMS	Bachelor of Homœopathic Medicine and Surgery
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral, Technical and Economic Cooperation
CAM	Complementary and Alternative Medicine
CCH	Central Council of Homœopathy
CCRH	Central Council for Research in Homœopathy
CME	Continuing Medical Education
DLC	Differential Leukocyte Count
ECH	European Committee for Homeopathy
EMR	Extra-Mural Research
GMP	Good Manufacturing Practices
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
HPC	Homœopathic Pharmacopoeia Committee
HPI	Homœopathic Pharmacopoeia of India
HPL	Homœopathic Pharmacopoeia Laboratory
IJRH	Indian Journal of Research in Homœopathy
ISCHI	International Scientific Committee for Homeopathic Investigations
ISM&H	Indian Systems of Medicine and Homœopathy
LMHI	Liga Medicorum Homœopathica Internationalis
NIH	National Institute of Homœopathy
NRHM	National Rural Health Mission
OPD	Out Patient Department
PG	Post Graduate
RBC	Red Blood Cells
RCT	Randomized Controlled Trial
SAHD	Serially Agitated High Dilutions
SAARC	South-Asian Association for Regional Cooperation
SGOT	Serum glutamic oxaloacetic transaminase
SGPT	Serum glutamic pyruvic transaminase
TM	Traditional Medicine
UG	Under Graduate
UK	United Kingdom
USA	United States of America
WBC	White Blood Cells
WHO	World Health Organization

EXECUTIVE SUMMARY

Homœopathy was formally propounded and systematized as a distinct new medical system by a German physician, Dr. Christian Friedrich Samuel Hahnemann in 1796. It is based on the principle 'similia similibus curentur', which means 'let likes be treated by likes', implying thereby that disease-producing powers of a substance can be used to treat diseases, exhibiting similar phenomenon. According to Homœopathy, health is a dynamic process tending to maintain a state of harmony between mind and body. Homœopathic medicines direct and stimulate the body's self regulatory mechanisms to restore its natural equilibrium. The treatment is customized individually with the objective of curing the patient while addressing the underlying cause of disease comprehensively and meticulously.

Presently, Homœopathy is accepted as a system of gentle healing. The inherent strength of the system makes it a safe therapy, free from adverse side effects and eco-friendly. It can be used safely by pregnant women, lactating mothers, infants, children, geriatric population, etc. for the treatment of various diseases. Medicines are palatable, easy to administer and the treatment is comparatively cost-effective than other medical systems.

Homœopathy was introduced in India in the early 19th century and has today become a popular system of treatment. Government patronage in India has resulted in successful institutionalization of Homœopathy in the healthcare delivery system of the country. A legislative framework has been established with the efforts of various agencies and stakeholders. Homœopathy has grown and developed in India in a scientific and systematic manner, making India its true home. The Government of India through its Ministry of AYUSH has been undertaking a number of steps including implementing schemes for its comprehensive development and propagation to enhance the health care coverage and quality of delivery of services. Homœopathic facilities are growing independently and are also co-located with other health care facilities. Quality educational system backed with the state of art research, drug manufacturing and health care delivery and regulatory framework have been established. India may be a role model for other developing countries seeking resource-efficient and effective treatment facilities for meeting growing health needs. In this context, India has already supported Sri Lanka in development of policies and regulations to establish Homœopathy there. Recently, the Indian Government has signed a Letter of Intent with the Government of United Mexican States for collaborations in the field of Traditional Systems of Medicine and Homœopathy. Students from different countries, including Germany, BIMSTEC countries, SAARC countries etc. have been coming to India for studying Homœopathy. Homœopathic drugs manufactured in India are being exported in large quantity to countries across the globe.

The Central Council for Research in Homœopathy (CCRH) has been established as an apex

autonomous body to undertake, coordinate and develop research in fundamental and applied aspects of Homœopathy. The Council undertakes research through 32 institutes and units spread across the country, where specific research studies are conducted along with provision of clinical services. Clinical research studies explore the effectiveness of Homœopathy in specific disease conditions. A large number of observational clinical research studies have been conducted, and a number of randomized control trials are in progress. Basic researches in the field of Homœopathy have been conducted on biological models (in-vivo and in-vitro) and on physico-chemical models. The Council collaborates with national and international organizations for basic and clinical research studies. Research outcomes are published from time to time in journals, books, monographs, etc. for wider dissemination of findings. The Indian Journal of Research in Homœopathy, published by the Council, is a peer reviewed journal publishing research outcomes including clinical research, basic research and drug research (plant studies, drug standardization, drug proving and clinical verification) studies.

The Ministry of AYUSH implements an extra-mural research scheme under which grant-in-aid is provided to organizations and scientists to conduct specific time-bound research projects. Clinical research studies have been conducted on conditions such as cervical spondylosis, diabetes mellitus, drug de-addiction, ovarian cyst, diarrhoea, scabies, etc. Pre-clinical studies on immunological parameters associated with rheumatoid arthritis, Ehrlich cell carcinoma, alcohol induced cardiac neuropathy etc. gave positive results demonstrating action of high dilutions of homœopathic medicines. The outcomes of studies have been published in national and international journals.

The Drugs and Cosmetics Act, 1940 & Rules, 1945 have specific provision for homœopathic drugs. Monographs on 944 drugs have been published in the Homœopathic Pharmacopoeia of India, which gives the identification features and standardization parameters for preparation of Homœopathic drugs. The drug manufacturing industry has to be GMP compliant. Drug research studies involving drug standardization, drug proving and clinical verification generate standardization parameters of drug substances and the therapeutic indications of drugs. For drug research, the CCRH has focussed on drugs of Indian origin that has enriched the Homœopathic Materia Medica.

In the field of education, there is a basic educational requirement of BHMS (Bachelor of Homœopathic Medicine and Surgery of 5½ year duration including one year internship) for practising Homœopathy in India. A separate course, Doctor of Medicine in Homœopathy [MD (Hom.)], of 3 years duration is conducted in various recognized specialities for developing expertise in the respective fields. Post-doctoral research programmes (Ph.D) are also being provided. With 187 Homœopathic medical colleges, education is available in almost all parts of the country; practitioners are available in public and private sectors in both rural and urban areas. Homœopathic services are provided to the people through government, private and voluntary healthcare organizations.

The integration and mainstreaming of Homœopathy and other AYUSH systems in the health care delivery is a major operational strategy of the Government of India to bring in comprehensive health care facilities. Building consensus among the various stake-holders and the beneficiaries of the services about the efficacy and safety of these systems, together with the emphasis on their relative strengths, is the key to successful policy implementation, wherein the various traditional health systems and Homœopathy co-exist with the modern system of medicine to form a unique model of medical pluralism. India is consolidating its efforts for integrating Homœopathy through the wide range of experiences gained, to become a global destination for homœopathic education, practice, research and drug development.

This document is an initiative of the Ministry of AYUSH to provide an overview of education, practice, research and drug development of Homœopathy in India. The document contains five chapters. The first chapter traces the origin, evolution and spread of Homœopathy and how it has been institutionalized and established in India. The basic philosophy, therapeutic approaches of the system and areas of scope are briefly described in the next chapter. Subsequently, the document focuses on research studies conducted in India, drug development and regulatory process, educational framework & scenario of practice of Homœopathy in the country. The progress made in these fields so far is described, which identifies the growth of Homœopathy in the country. However, this platform is too limited to do adequate justice to all the domains. The links to different websites are given, which can be referred to for detailed information. It is expected that this document will be useful for researchers, academicians, manufacturers, policy makers and other groups of stakeholders.

INTRODUCTION

Homœopathy, compared to other medical systems, is of recent origin, dating about 200 years back. Dr. Christian Friedrich Samuel Hahnemann, Founder of Homœopathy (Figure 1), was a great pharmaceutist, linguist and a reputed German physician. He was dissatisfied with the state of medical practice at that time and took to experimentation in Chemistry and translation of scientific literature. He contributed regularly to Crell's *Annals of Chemistry* (the first journal devoted to Chemistry in Germany) from 1787 to 1794[1]. While translating Cullen's Materia Medica, from English to German in 1790, he came upon the idea of experimenting with Cinchona bark (a drug used for treatment of intermittent fevers in those times) on himself. He found that when taken in a healthy state, cinchona produced symptoms similar to those of intermittent fever. Over a span of six years, Dr. Hahnemann conducted many such experiments with known medicinal substances and deduced the principle of similia similibus curentur i. e., 'let likes be treated by likes'. He concluded in 1796 that the therapeutic activity of any substance in a sick individual is dependent on its capability of producing a similar diseased state in a healthy individual.

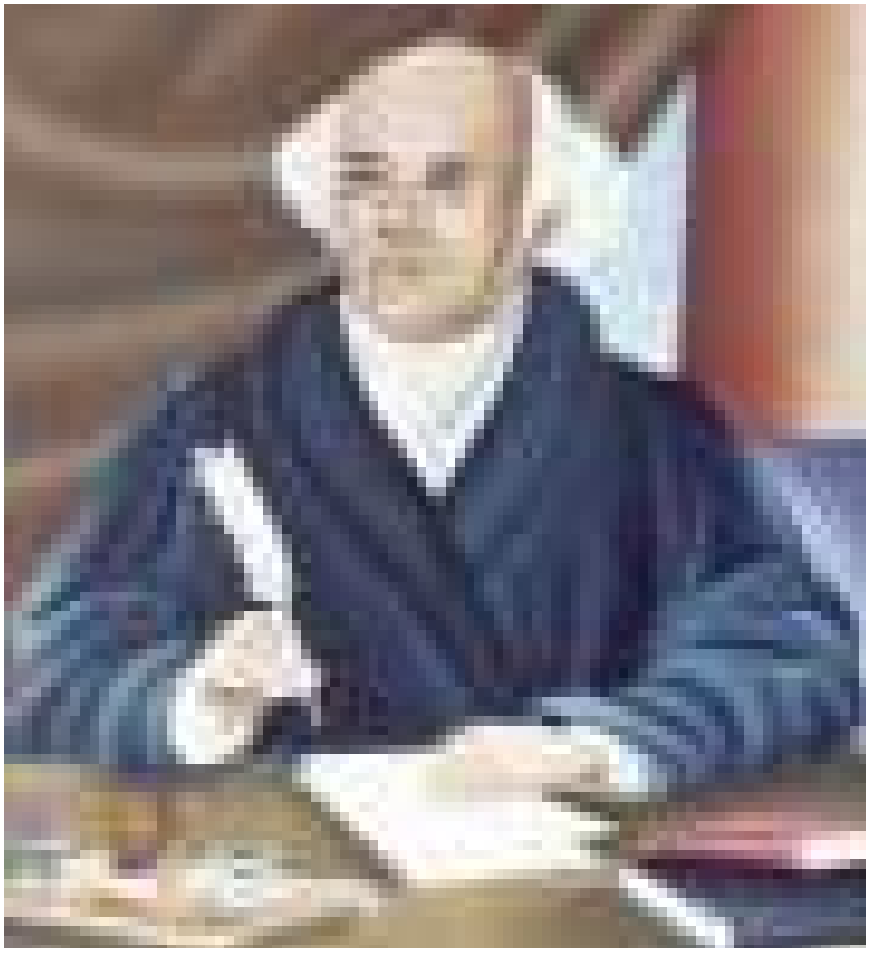

Figure 1: Portrait of Father of Homœopathy Dr. Christian Friedrich Samuel Hahnemann, (1755-1843)

Dr. Hahnemann identified this new system of therapeutic application of drugs for treatment of patients as 'Homœopathy' derived from the Greek words 'Homoios', meaning 'similar', and 'pathos', meaning 'suffering'. He also coined the term 'Allopathy' (Greek words 'Allos', meaning 'different', and 'pathos', meaning 'suffering') for the prevailing medical system. The word Allopathy

[1]Bradford TL. Life and letters of Dr. Samuel Hahnemann. Delhi: B. Jain publishers; 2004

first appeared in 1816 in the preface to the first edition of the second volume of Materia Medica pura, where Dr. Hahnemann described medicines "which stimulate the healthy body as illness different (allopathic) from the one that is to be cured[2]".

Dr. Hahnemann contributed in reforming the medical practices of the 18th century by attributing the cause of disease to the internal environment of the host and thus originated the basic tenet that every individual reacts differently in health and disease. Further, he undertook proving of drugs on healthy human beings, giving dynamised form of medicines in minimum dose and advocated restoration of health of sick individuals in a gentle manner. In the journey from large to smaller doses of drugs, the effects of a substance travel from universally lethal for all, to finer symptoms in a few sensitive individuals. Thus toxicity, side effects or drug resistance is not encountered during the course of treatment and the medicines are truly simple – both in form and application. The process of individualization builds up a doctor-patient relationship allaying natural fears and apprehensions of a sick individual.

Since its introduction to the humanity, the basic principles of Homœopathy have not changed, as it is primarily a specialized system of rational therapybased on fixed and definite laws of nature and in this lies its inherent strength. Even after 200 years, the philosophy as laid down by Dr. Hahnemann forms the guiding force of homœopathic practice for physicians around the world.

Homœopathy is one of the most popular systems of medicine, sought after by suffering patients. It is playing a major role in the integrated the public healthcare delivery system of India due to its wide acceptance by people at large. This acceptance is mainly due to its simplicity, affordability, safety, holistic approach etc.

1. 1 EVOLUTION OF HOMŒOPATHY

Homœopathy came into being in the 18th century with the determination and incessant efforts of Dr. Hahnemann, during the era of experimentation, when medicine had taken a trajectory from the established norms and was largely dependent on observations and inferences. A host of scientific developments took place and a shift in the practice of medicine transpired. Throughout his life, Dr. Hahnemann along with his disciples continued experimentation to make the science of Homœopathy more perfect. He wrote six editions of his masterpiece, Organon of Medicine, from 1810 to 1842, where he gradually evolved the philosophy of Homœopathy, largely by his own observations and experimentations. Dr. Hahnemann, alone, could prove therapeutic indications of 111 drugs during his lifetime that are used successfully in homœopathic practice even today.

[2]Jutte Robert. Samuel hanhnemann. The Founder of Homeopathy. Translated by margot Saar. Stugart 2012 [cited 2012 Dec 10]. Available from: http://www.igm-bosch.de/content/language1/downloads/samuleHahnemannThe Founder of Homeopathy.pdf

The early 19th century saw the establishment of colonial powers with its consequent political, social, cultural and scientific transformations. These colonial powers brought in urbanization, modernization, industrialization, literacy, mass communication and political participation by the masses. The spread of the western school of medicine i. e. 'Allopathy' was aided by the political and economic powers of the colonial rulers and increasing nationalization of medicine gave rise to pharmaceutical companies.[3] Where the other traditional systems remained secluded in their native countries of origin, Homœopathy had spread rapidly to the other parts of the world in the early 19th century. Consequently, Homœopathy flourished in the European nations (Austria, Hungary, Italy, Denmark, France, England, Spain, and Belgium). In Germany, Homœopathic hospitals were established in Munich, Berlin and many other cities. Within Europe, Austria was the first country to be influenced by the growing popularity of Homœopathy in Germany. By 1819, Homœopathy had made sufficient advance in the Habsburg Empire (present-day Austria & Hungary) to the extent that its practice was forbidden by an Imperial Decree. In spite of this, Homœopathy successfully asserted itself and in 1837, this decree was rescinded. Homœopathy reached Italy from Austria and flourished there from 1820 to 1840.

The first homœopath reached Australia in 1840. Free homœopathic dispensaries for the poor were established in Victoria (Geelong, Melbourne and Ballarat), Adelaide, and Sydney. The Melbourne Homœopathic Hospital, established in 1876, was the first one in the Australian continent. The leading figure in the establishment of the Adelaide Children's Hospital was a homœopath, Dr. Allan Campbell. At that time, three of its six medical officers were homœopaths.[4]

Homœopathy gained a massive following in the United States and the American continent in the late 19th century. In 1844, the American Institute of Homœopathy was formed, becoming the first national medical organization in the United States.[5] Homœopathic treatment gained recognition because of its success in treating many epidemic diseases rampant at that time — including scarlet fever, typhoid, cholera and yellow fever. Statistics indicate that the death rates in homœopathic hospitals from these epidemics were often one-half to as little as one-eighth of those in orthodox medical hospitals.[6] Homœopathy, born in Germany, developed in the America. New drugs were added in the *Homœopathic Materia Medica*, new understandings were developed in homœopathic philosophy, and a new dimension was added in the homœopathic pharmacy (in the form of higher potencies and scale of dilution).

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[3] Torri MC, Hermann TM. Bridges between Tradition and Innovation in Ethnomedicine: Fostering Local Development through Community-Based Enterprises in India. Canada: Springer; 2011.

[4] Torokfalvy P, Armstrong B. A Brief History of Homoeopathy in Australia. [Internet]. Australia: The centre for Australian homoeopathic History; 2012 [cited 2012 August 16]; Available from: http://www.historyofhomeopathy.com.au/articles/18-articles/190-a-brief-history-of-homeopathy-in-australia.html.

[5] Winston J. The Faces of Homeopathy: An Illustrated History of the first 200 Years. Tawa, New Zealand: Great Awk Publishing; 1999.

[6] Ullman D. Discovering Homeopathy: Medicine of the 21st century. Berkeley, USA: North Atlantic Books;1987

Homœopathy reached Asia, including Russia and the Indian subcontinent in the early 19th century. In India too, it gained a foothold owing to its successful use in cholera and other epidemics. Homœopathic dispensaries, hospitals, educational institutes and pharmacies opened in all parts of India and it became the system of the common man.

The system had spread around the world, within a relatively short period as it had similarities in its approach with the prevailing traditional and ethnic medical systems[7] and merged with them. Thus, homœopathic hospitals, colleges and pharmacies were opened in many parts of the world during the 19th century. Simultaneously, the science of Homœopathy evolved in the form of new drugs, pharmaceutical procedures, generation of clinical evidence, development of literature in the form of *Materia Medicas, Repertories, Pharmacopoeias,* philosophical essays, etc. However, a combination of various factors, especially in the first half of 20th century, such as difference of opinion amongst homœopaths, the disparity between principles and practice, , advances in allopathic pharmaceuticals, resulted in temporary sidelining of Homœopathy in most parts of the world. In contrast, in India, Homœopathy flourished throughout the 20th century, particularly in the latter part of the century. Today, India has a strategic advantage over other countries, in terms of infrastructure and intellectual and clinical resources in Homœopathy.

1. 2 CURRENT GLOBAL SCENARIO

Homœopathy is currently used in over 80 countries. It has legal recognition as an individual system of medicine in 42 countries and is recognized as a part of complementary and alternative medicine in 28 countries.[8] Three out of four Europeans know about Homœopathy and of these, 29 percent use it for their own health care.[9] Studies have identified Homœopathy to be the most frequently used CAM therapy for children in European countries [10,11,12,13,14,15]. The National Health Interview Survey 2007 (of

[7]David A. Colonizing the Body-State Medicine and Epidemic Disease in Nineteenth-Century India; USA: University of California Press; 1993.

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[10]Grootenhuis MA, Last BF, de Graaf-Nijkerk JH, Wel M. van der. Use of alternative treatment in pediatric oncology. Cancer Nursing 1998; 21(4): 282–8.

[11]Steinsbekk A, Bentzen N, Brien S. Why do parents take their children to homeopaths? — an exploratory qualitative study. Forschende Komplementärmedizin 2006;13(2): 88–93.

[12]Ekins-Daukes, Helms PJ, Taylor MW, Simpson CR, McLay JS. Paediatric homoeopathy in general practice: where, when and why?. British Journal of Clinical Pharmacology 2005 59(6):743–9.

[13]Huber R, Koch D, Beisner I, Zschocke I, Ludtke R. Experience and attitudes towards CAM—a survey of internal and psychosomatic patients in a German University Hospital. Alternative Therapies in Health and Medicine 2004;10(1): 32–36.

[14]Härtel U, Volger E. Use and acceptance of classical natural and alternative medicine in Germany—findings of a representative population-based survey; Forschende Komplementarmedizin und Klassische Naturheilkunde 2004;11(6): 327–34

[15]Längler Alfred, Spix Claudia, Edelhäuser Friedrich, Kameda Genn, Kaatsch Peter,Seifert Georg. Use of Homeopathy in Pediatric Oncology in Germany; eCAM 2011; doi:10.1155/2011/867151

past 12 months), estimated 3.9 million adults and 910,000 children used Homœopathy in North America[16].

According to a survey conducted in India, sixty two percent of current Homœopathy users have never tried conventional medicines for day-to-day health problems and eighty two percent would not switch to conventional treatments, unless it is an emergency[17].

Legislation regarding Homœopathy and other complementary and traditional systems is different in different countries[18]. It is officially recognized in Central and South American countries (Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico), European countries (Belgium, Bulgaria, Germany, Hungary, Lithuania, Portugal, Romania, Russia, Spain, United Kingdom) and in Asia (India, Nepal, Pakistan, Sri Lanka, Bangladesh). It is integrated into mainstream healthcare in Brazil, India, Pakistan, Sri Lanka, Mexico, Bangladesh and the United Kingdom.

1.3 HOMŒOPATHY IN INDIA

India has a population of over one billion and is an emerging economic global power. The country shows a wide variation in terms of per capita income, purchasing parity; impacting income, expenditure and social stratification. The collective orientation of the society reflects itself in the National Health Policy of India and also underlines the governmental patronage to modern as well as the Indian systems of Medicines and Homœopathy. The Government of India facilitated the spread and development of Homœopathy by recognizing and integrating it into healthcare delivery.

1.3.1 Major Milestones

The history of Homœopathy in India can be traced to the early 19 th century, to German missionaries treating people on the shores of Bengal. The first account of treatment is mentioned in the travelogue '35 Years In The East, Adventures, Discoveries etc.' of Dr. Honigberger, a physician and a student of Dr. Hahnemann. He treated the legendary Maharaja Ranjit Singh of the Punjab[18].

The initial success of Homœopathy in cholera and other epidemics in Bengal in the 19th century made it

[16]Barnes PM, Bloom B, Nahin RL. Complementary and alternative medicine use among adults and children: United States, 2007. National health statistics reports; no 12; Hyattsville, MD: National Center for Health Statistics. 2008. [cited on 2012 September 15]. Available from: http://www.cdc.gov/nchs/data/nhsr/nhsr012.pdf

[17]BS. A C Neilsen survey backs homeopathy benefits. Business Standard [Internet]; 2007 Aug 27[cited 2012Aug 16] Available from: http://www.business-standard.com/india/news/a-c-nielsen-survey-backs-homeopathy-benefits/295891/

[18]Das Eswara. History and Status of Homoeopathy around the World; New Delhi: B Jain Publishers; 2005

a known therapeutic system to the common man. Homœopathic charitable dispensaries and hospitals were opened, and private practitioners, either disciples of experienced homœopaths or from self-learning started practicing. It received a further impetus with the establishment of educational institutions and pharmacies. The system owes recognition to the concerted efforts of some eminent allopathic practitioners of the time, who opted for Homœopathy and used it with remarkable success. The efforts of a few institutionally trained homœopathic physicians paved the way for the then Bengal Provincial Government to establish the General Council and State Faculty of Homœopathic Medicine in 1943.

As per the Constitution of India, health care delivery is the primary responsibility of the government. Indian administrative set up being federal in nature, health care is allotted as a State subject. Post-independence in 1947, the legislatures of Indian States began enacting laws to regulate teaching, practice and research such as the Madras Registration of Practitioners of Integrated Medical Act of 1956 and the Mysore Homœopathic Practitioners Act of 1961. State legislatures made them responsible for strengthening colleges, hospitals, dispensaries and pharmacies dealing with Indian systems of medicine and almost all the states established Directorates of Indian Medicine for the development of traditional systems. At the centre, indigenous systems of medicine became a part of the Ministry of Health and Family Welfare and growth and development of these systems was made legitimate by including these systems in the First and all the subsequent National Five Year Plans[19]

The Homœopathic Pharmacopoeia Committee (HPC) was constituted in 1962 by the Government of India to lay down the standards for quality control and manufacturing of homœopathic drugs.

The Homœopathic Research Committee constituted in 1963 initiated the process of organized homœopathic research and identified priority research areas. A combined Council to conduct research in Indian Systems of Medicine and Homœopathy was formed initially (1969), which paved the way for individual research councils and consequently, the Central Council for Research in Homœopathy (CCRH) was formed (1978). The Council has evolved over the years to develop and identify broad areas of research in Homœopathy in the country. Scientists in India conduct clinical research, drug research and basic research and efforts are made to enhance the quality of research.

[19]1988 Indian system of medicine and homoeopathy – National and state profiles. Department of Indian Systems of Medicine & Homoeopathy. New Delhi (IN): Department of Indian Systems of Medicine & Homoeopathy, Ministry of Health and Family Welfare; 1988

The Homœopathy Central Council Act, 1973 (HCC Act) enacted by the Indian Parliament established the legislative mechanism to regulate education and practice in Homœopathy in the country. The National Institute of Homœopathy (NIH) was established in 1975 in Calcutta (now Kolkata) as a model institute for under-graduate & post-graduate education and research. The Homœopathic Pharmacopoeia Laboratory (HPL) was also founded in 1975 to lay down principles and standards for preparation of homœopathic drugs.

A separate department was constituted in the Ministry of Health and Family Welfare to specifically look at the issues concerned with the Indian Systems of Medicine and Homœopathy (ISM & H). The Department of ISM&H was established in 1995 and re-named as Department of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homœopathy). A National Policy on Indian Systems of Medicine and Homœopathy was enunciated in 2002 with the objective of enhancing the outreach of healthcare through these systems. The policy also outlined strategies for growth of education, research, drug development, infrastructure facilities, and integration of ISM&H in the health care delivery system and national health programmes. In 2014, The Department of AYUSH was converted to a Ministry of AYUSH.

Due to the sustained efforts of the government, an institutional framework of Homœopathy has been established at the Centre as well as in all the states. The important milestones in the development of Homœopathy in the country are summarized as below:

Table 1 Milestones in the Development of Homœopathy in India[20,21,22]

Year	Milesone
1839	Dr. Honigberger treated Maharaja Ranjit Singh, then ruler of the Punjab.
1845-46	Homœopathic hospitals started by surgeon Samuel Brooking at Tanjore and Paducuta in South India.
1848-49	In the Great Epidemic of Cholera, Homœopathy was widely used by Dr. Rutherford Russel and Dr. Cooper in India.
1861	Babu Rajendra Lal Dutt, the Father of Indian Homœopathy, brought Homœopathy into high esteem by curing famous people like Pandit Ishwar Chandra Vidyasagar and Raja Sri Radhakanta Deb.
1867	• Dr. Mahendra Lal Sircar, a pioneer of scientific research in India, became the first allopath to be converted to a homœopath. • Dr. Leopold Salzer of Vienna University practiced Homœopathy in Calcutta. • Banaras Homœopathic Hospital and Dispensary established by Mr. Ironside, Judge of Banaras.
1868	The first journal of Homœopathy 'The Calcutta Journal of Medicine' published and edited by Dr. ML Sircar.
1881	First homœopathic college, 'Calcutta Homœopathic Medical College' established by Dr. PC Majumdar & Dr. DN Roy. Dr. BK Bose, a direct disciple of Dr. JT Kent, an internationally renowned homœopath, was a member of the faculty.
1937	First Resolution on Homœopathy, moved by Mr. Ghias-ud-Din, adopted by the Bengal Legislative Assembly.
1943	The Bengal Provincial Government accorded official status to Homœopathy and constituted the General Council of Homœopathy & State Faculty of Homœopathy.
1944	All India Institute of Homœopathy (an association of institutionally qualified practitioners) formed.
1948	Resolution moved by Shri Satis Chandra Samanta, Member of Parliament, West Bengal for recognition of the homœopathic system of treatment by the Indian Union. The Homœopathic Enquiry Committee appointed by the Government of India.

[20]Chand DH. History of Homoeopathy in India in the 19th Century. New Delhi: B Jain Publishers; 2007

[21]Saxena KG. Struggle for Homoeopathy in India. New Delhi: B Jain Publishers; 1992

[22]Samuel Vijaya Bhaskar Poldas. Geschichte der Homöopathie in Indien: von ihrer Einführung bis zur ersten Anerkennung 1937. Stuttgart: Karl F. Haug Verlag; 2010

1949	The Homœopathic Enquiry Committee submitted its report and recommended constitution of Central Council of Homœopathic Medicine.
1951	A Committee to advice on matters related to Homœopathy appointed by the Planning Commission.
1952 54	• Rajkumari Amrit Kaur, the then Union Health Minister, Government of India constituted an ad-hoc committee on Homœopathy. • Ad-hoc committee replaced by the Homœopathic Advisory Committee with Secretary, Ministry of Health as Chairperson.
1955	The postal department issued a special stamp cancellation on 10th April, to commemorate Dr. Hahnemann's Bicentennial Birth Anniversary.
1961	First Faculty of Homœopathy was created in the Agra University, UP, affiliating the National Homœopathic Medical College, Lucknow, Uttar Pradesh.
1962	The Indian Homœopathic Pharmacopoeia Committee was set up
1963	Research Committee on Homœopathy constituted to give credence to research in Homœopathy and to establish it on a scientific footing.
1964	The central government constituted a Rural Homœopathic Medical Aid Committee.
1965	Central Council of Health recommended that a Central Council of Indian Systems of Medicine may be set up to regulate standards of education, examinations, qualifications and practice in Ayurveda, Unani and Homœopathy.
1967	India played host for the first time to the International Homœopathic Congress of Liga Medicorum Homœopathica Internationalis (LMHI) in New Delhi.
1969	Central Council for Research in Indian Medicine and Homœopathy constituted.
1971	First volume of Homœopathic Pharmacopoeia of India published.
1973-74	Homœopathy Central Council Bill passed by the Parliament was enacted on getting the assent of the President of India followed by its notification as the Homœopathy Central Council Act, 1973. Central Council of Homœopathy (CCH) was constituted through a Gazette Notification in August 1974. (Figure 2)
1975	Homœopathic Pharmacopoeia Laboratory established in Ghaziabad, Uttar Pradesh. National Institute of Homœopathy established in Calcutta, West Bengal.
1977	Hahnemann Stamp issued by the Ministry of Communication which released a first day cover depicting Dr. Hahnemann (Figure 3).
1978	Central Council for Research in Homœopathy established.
1983	The Government of India approved minimum standards for Diploma and Degree courses in Homœopathy as recommended by Central Council of Homœopathy.

1989	CCH introduced post-graduate degree course in Homœopathy.
1993	Central Council of Homœopathy notified central register for the first time in the official gazette.
1995	A new Department of Indian Systems of Medicine and Homœopathy (ISM&H) created in the Ministry of Health & Family Welfare, re-named as Department of AYUSH in the year 2003.
1997	First National Convention on Homœopathy organized by Department of AYUSH, Government of India.
2002	National Policy on Indian Systems of Medicine and Homœopathy formulated.
2006	CCRH became a part of the International Scientific Committee on Homœopathic Investigations (ISCHI). The Government of India notified standards of Good Manufacturing Practices (GMP) guidelines for the homœopathic drug industry.
2007	National campaign on Homœopathy for Mother and Child Care launched by the Department of AYUSH in collaboration with CCRH.
2009	The Indian Postal Department issued a commemorative stamp on the birth anniversary of Dr. Mahendra Lal Sircar (Figure 4).
2011	66th World Homœopathic Congress of LMHI, held at New Delhi (Fourth in India).
2014	Ministry of AYUSH formed.
2015	National AYUSH Mission launched.

Figure 2: Inaugural ceremony of the Central Council of Homœopathy (1974) by Dr. Karan Singh, the then Union Minister of Health and Family Planning, Government of India.

Figure 3: First day cover of postal stamp of Dr. Hahnemann issued by Department of Posts in 1977, on the occasion of LMHI International Congress in India.

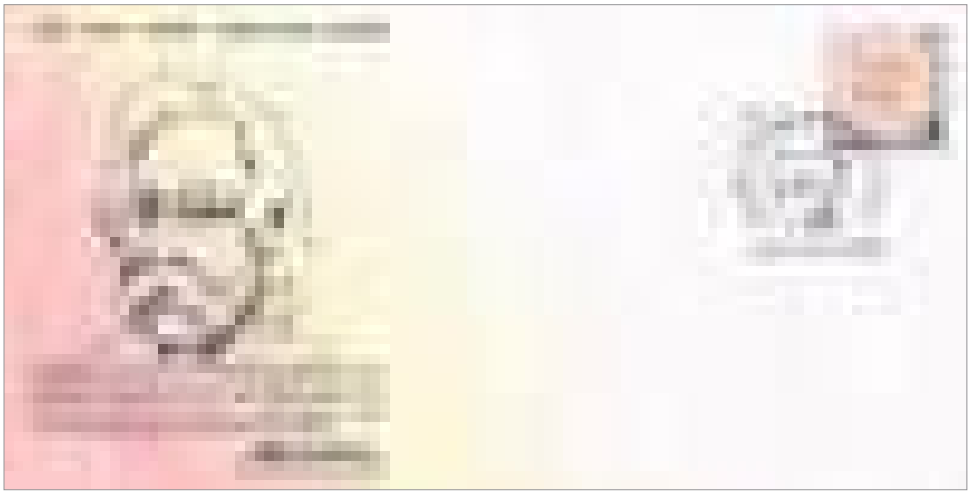

Figure 4: First day cover of postal stamp of Dr. Mahendra Lal Sircar issued by Department of Posts in 2009.

1.3.2 Infrastructure and Network in India

The network, evolved over the years for Homœopathy in India, consists of regulatory and autonomous bodies to ensure synchronization in education, practice, research and drug development. Also, it ensures that infrastructure for Homœopathy collates with the structure for other medical systems at the highest levels, thereby converging these systems into a single health care delivery system in the country.

Table 2 Statutory and Autonomous Bodies under Ministry of AYUSH, Government of India

Central Council of Homœopathy	Central Council for Research in Homœopathy	Homœopathic Pharmacopoeia Laboratory	National Institute of Homœopathy
Regulatory authority for education and practice in India.	Apex body to conduct and monitor research activities.	Lays down standards of Homœopathic drugs, their verification and for testing the purity and quality.	Model institute for medical education and research.
Established in 1974 as a statutory body under HCC Act, 1973	Established in 1978 as an autonomous body managed by governing body headed by Minister of AYUSH	Established in 1975 as a subordinate office of Ministry of AYUSH	Established in 1975 as an autonomous organization managed by governing body headed by Minister of AYUSH.
Contact Information: Secretary, Central Council of Homœopathy 61-65, Institutional Area Opposite D Block Janak Puri, New Delhi- 110058	Contact Information: Director General, Central Council for Research in Homœopathy 61-65, Institutional Area, Opposite D Block, Janakpuri, New Delhi - 110058	Contact Information: Director, Homœopathic Pharmacopoeia Laboratory, Kamla Nehru Nagar, Ghaziabad- 201002	Contact Information: Director, National Institute of Homœopathy Block GE, Sector III, Salt Lake City, Kolkata- 700106
www.cchindia.com	www.ccrhindia.org	www.hplism.nic.in	www.nih.nic.in

Other Organizations of Government of India:

1. National Medicinal Plants Board (NMPB) – Coordinating and supporting program related to conservation, cultivation and development of medicinal plants
   Contact: B Block, GPO Complex, INA, New Delhi
   www.nmpb.nic.in
2. North Eastern Institute of Ayurveda and Homœopathy (NEIAH) – Institute is being developed to promote education and research and health care through Ayurveda and Homœopathy under one platform
   Contact: Mawdiangdiang, Shillong, Meghalaya – 793018
   www.neiah.nic.in

Regulations

Education, practice, manufacturing and sale of medicines of Homœopathy are regulated in the country by:

- The Homœopathy Central Council Act, 1973
- The Drugs and Cosmetics Act, 1940 and Rules, 1945
- The Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 to prevent misleading advertisements of cure claims for specific disease conditions.

Health care coverage[23]

AYUSH services are included in the health care delivery system of the country at all levels of primary, secondary and tertiary health care. The Government of India has a number of programmes and initiatives for promotion of AYUSH systems and an increase in health care coverage in the country. The regulations ensure that quality of care is maintained and medical pluralism permits patients to opt for treatment of their choice.

Healthcare services in Homœopathy are provided by 221 hospitals and 7695 dispensaries run by state governments and municipal bodies, Central Government Health Scheme, labour ministry and railway ministry. The Government of India launched the National Rural Health Mission (NRHM), to carry out necessary architectural correction in the basic health care delivery system in the country. A strategy in the NRHM is to mainstream the Indian systems of medicine and Homœopathy to facilitate health care through these systems. Under NRHM, AYUSH facilities have been co-located in 416 district hospitals, 2942 community health centres and 9559 primary health centres in 2011. 'AYUSH Wellness Centre' has recently been inaugurated by Hon'ble President of India, Shri Pranab Mukherjee on 25th July, 2015 at the President's Estate, New Delhi (Figure 5).

[23]AYUSH in India AYUSH in India; [Internet].New Delhi(IN). Ministry of AYUSH [updated 23/03/2015, cited 2015 June 18]. Available from http://indianmedicine.nic.in/ writeraddata/linkages/2145345958-Table1.pdf

Table 3 Infrastructure of Homœopathy

S.No.	Facility	Numbers
1	Hospitals	221
2	Beds	7173
3	Dispensaries	7695
4	Registered practitioners	279518
5	UG Colleges	187
	Admission Capacity (UG)	13088
6	PG Colleges	42
	Admission Capacity (PG)	898
7	Manufacturing Units	319

Since the last two decades there is a consistent focus to enhance quality of services, with initiatives to upgrade education, research and drug development and escalate health care delivery. Some of the initiatives taken by the Government of India in this direction are[24]

- Publication of the Essential Drug list of Homœopathy
- Financial assistance to State Governments to procure medicines
- Continuing Medical Education programmes for clinicians
- Financial assistance to the organizations to establish specialty clinics, wards and or out-patient wing in allopathic hospitals, e. g. cafeteria approach as adopted by Department of ISM & H, Delhi Government
- Scheme of grant-in-aid for promotion of AYUSH Intervention in public health initiatives
- Scheme for grant-in-aid to non-profit/non-governmental AYUSH organizations/ institutions for up-gradation to Centres of Excellence.

1. 3. 3 INTERNATIONAL CO-OPERATION

India has hosted four International Congresses of LMHI in the years 1967, 1977, 1995 and 2011. All the Congresses were highly successful and were provided required political support. During the last Congress, Smt. Pratibha Devi Patil, the then Hon'ble President of India gave special audience to the overseas and Indian delegates. It was inaugurated by Shri Ghulam Nabi Azad, former Hon'ble Union Minister of Health & Family Welfare, Shri Salinda Dissanayake, Hon'ble Minister of Indigenous Medicine, Sri Lanka and Shri Anil Kumar, former Secretary (AYUSH), Government of India.

Indian homœopathic physicians are updating themselves with the global scenario of Complementary and Alternative Medicine/ Traditional Medicine (CAM/TM) through World Health Organization

[24]Department of AYUSH [Internet]. New Delhi(IN): Department of AYUSH © 2011 [cited 2012 Sept 04]. Available from: http://indianmedicine.nic.in/http://indianmedicine.nic.in/writeraddata/linkages/5592895655-Table.pdf

Figure 5: Hon'ble President of India Shri Pranab Mukherjee inaugurating 'AYUSH Wellness Centre' at President's Estate on 25th July 2015.

From L to R : Shri Pranab Mukherjee, Hon'ble President of India; Shri Najeeb Jung, Lieutenant Governor of Delhi, Shri Shripad Naik, Hon'ble Minister of AYUSH, Government of India.

(WHO) fellowships. CCRH undertook international collaborative study with the University of California, Los Angeles (UCLA) on Human Immuno deficiency Virus/ Aquired Immuno-deficiency Syndrome (HIV/AIDS) and scientists of CCRH were trained at the UCLA on HIV/AIDS. CCRH is also one of the founding members of the International Scientific Committee for Homœopathic Investigations (ISCHI), and successfully contributing to the development of research protocols for conducting clinical and basic research studies. Homœopathy is getting the patronage of Government of India,Hon'ble Prime Minister Shri Narendra Modi also hailed the role of Homœopathy in dentition troubles during his speech on the occasion of World Ayurveda Congress (Figure 6).

To increase international collaborations, the Ministry of AYUSH has laid down provisions for establishing a Chair of AYUSH systems including Homœopathy in foreign educational and research universities[25]. The objective is to promote academic and collaborative research activities, develop quality standards for education and thereby present Indian model of institutionalization to the world. So far, India has supported Sri Lanka in development of policies and regulations to establish Homœopathy. Letter of intent has been signed by the Indian Government with the Government of United Mexican states for collaborations in the field of Traditional Systems of Medicine and Homœopathy. To explore the area of collaboration between the Ministry of AYUSH & Department of Health and Human Services in USA , a delegation from India lead by Secretary AYUSH visited USA from 13th-17th April 2015 (Figure 7). Letter of intent was signed between the CCRH and the Escula Nacional de Medicina & Homœopatia of the Instituto Politechnico Nacional for undertaking joint research programmes and exchange of experts (Figure 8).

[25]AYUSH Chair guidelines; [Internet]. New Delhi [IN] : Department of AYUSH [updated 2012 May18, cited 2012 Sept15]. Available from: http://indianmedicine.nic.in/index2.asp?lang=1&slid=650&sublinkid=244

Figure 6: Hon'ble Prime Minister of India, Shri Narendra Modi at 6th World Ayurveda Congress and Arogya Expo, held in November 2014 at New Delhi.

Figure 7: AYUSH delegation to USA lead by Secretary AYUSH, Shri Nilanjan Sanyal.

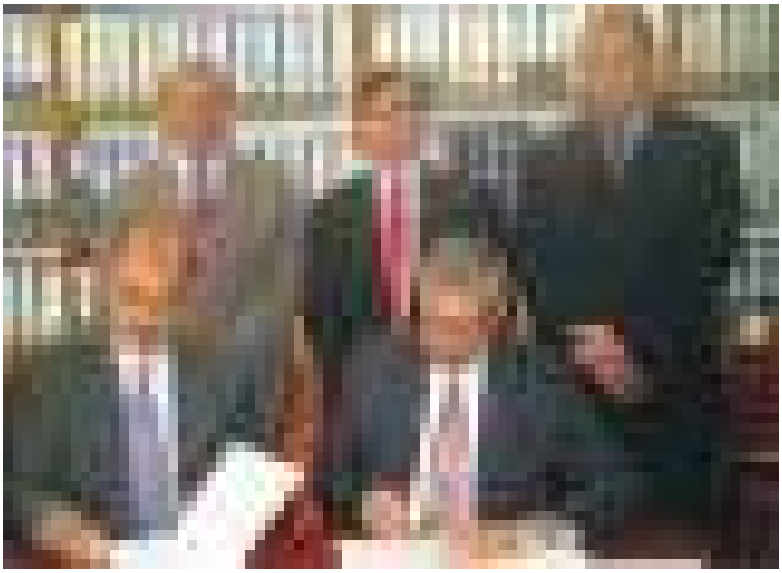

Figure 8: Signing of letter of intent between the Central Council for Research in Homœopathy, India and the Escula Nacional de Medicina y Homœopatia of the Instituto Politechnico Nacional, Mexico.
From L to R (Standing): Sh. Sujan R Chinoy, Hon'ble Indian Ambassador to Mexico; Sh. Anil Kumar, former Secretary, (the then) Department of AYUSH, Ministry of Health and Family Welfare, Government of India.
(Sitting): Mr. Crisoforo Ordones Lopez, Director, Escula Nacional de Medicina y Homœopatia of the Instituto Politechnico Nacional, Mexico and Dr. Raj K. Manchanda, Director General, Central Council for Research in Homœopathy, India.

Initiatives of the Ministry of AYUSH in this regard:

- International exchange of experts and officers
- Incentives to drug manufacturers, entrepreneurs, AYUSH institutions etc. , for international propagation of AYUSH.
- Support for international market development and AYUSH promotion-related activities
- Translation and publication of AYUSH literature in foreign languages
- Establishment of AYUSH information cells/health centres in Indian embassies/missions and in cultural centres set up by the Indian Council for Cultural Relations in foreign countries and deputation of experts
- International fellowship program for foreign nationals for undertaking AYUSH courses in premier institutions in India.

With legislations and regulations in place and government patronage in mainstreaming Homœopathy in the public healthcare delivery system, it becomes evident that India is truly a home for Homœopathy. Homœopathy has spread and developed in India as nowhere else in the world. Education, practice, research and drug development, all the four aspects are well entrenched. With this position, India can look ahead to strategic partnerships from other nations for bilateral relations in education, research and industry.

1. 4 ORGANIZATION OF THE DOCUMENT

This document provides a profile of Homœopathy covering technical and infrastructural aspects, research & development, homœopathic practice and education in the country, which makes India a potential international destination for education and research in Homœopathy.

The chapter 1 dealing with introduction has traced the historical evolution of Homœopathy as a medical system and highlighted its development and existing infrastructure in India. Further, milestones of development of Homœopathy in India has been outlined in Table 1. Moreover, important regulations, and health care coverage & vast infrastructure of Homœopathy in the country have been covered in this chapter. Besides, initiatives of the Government of India on international co-operation and schemes for promotion and development of Homœopathy have been elaborated.

Chapter 2 deals with the principles and strengths of Homœopathy, and how these are distinct from other medical systems. The aim of this chapter is to sensitize the readers about the fundamental principles and therapeutic approaches of Homœopathy which define its scope and advantages in the present health scenario. The chapter provides a unique way of potentization process in preparation of homœopathic medicines making it simple, effective and safe. The use of individualized and customized approach in Homœopathy differentiates it from other systems.

Chapter 3 focuses on research endeavours in India by the Central Council for Research in Homœopathy (CCRH), being an apex research organization, apart from those made through extra-mural research scheme and of individual scientists/organizations. Readers are apprised of the outcomes of individual clinical research studies ranging from simple observational studies to gold standard, i.e., randomized controlled trials (RCTs) in various clinical conditions and basic research including pre-clinical studies. The research outcomes highlight the strength of Indian institutions and suggest the road ahead.

Chapter 4 deals with the drug development process in Homœopathy involving standardization of drug substances through pharmacognostic, physico-chemical and pharmacological studies; provings on healthy human beings and clinical verification for evolving therapeutic indications. The Homœopathic Materia Medica has been enriched by drugs of Indian origin, therapeutic utility of which have been identified. This chapter also describes the statutory and regulatory bodies established by the Government of India. A brief overview of the homœopathic industry, the drug control legislations and regulations is also provided.

Chapter 5 gives a glimpse of institutional mechanisms, infrastructure and regulations governing education and practice in Homœopathy in India. The National Institute of Homœopathy and initiatives by the Government of India are also briefly touched upon. A large number of public health care facilities co-exist with private establishments, both in education and practice. Co-location of clinical facilities providing treatment through Homœopathy and other systems of medicine makes treatment of choice accessible and affordable; with appropriate cross referrals based on systems' strengths with an ultimate aim of benefitting the patient. Homœopathic associations in India have also played a major role in sharing experience among the practitioners and creating awareness amongst the public.

The dissemination of research findings is imperative to ensure that the findings reach the stakeholders and the research results are translated into practice. A list of publications of the CCRH providing authentic information is given as suggestive readings at the end of the document along with a glossary of important terms.

PRINCIPLES AND SCOPE

The practitioners of health, over the ages, have developed an approach to health, disease and its treatment based on systematic observation and cumulative knowledge. The science has evolved through experimentation and deductive reasoning; whereas the art of medical practice has been dependent on the individual observation of physicians. The past 200 years have seen tremendous changes occurring in the field of technology, which have impacted medical science like never before. The concept of the living body in health and disease went through a shift from the spiritualistic approach to the Cartesian mechanistic approach and to the concept of individualization and customization of treatment to suit individual constitutions. With this change the principles of Homœopathy have become more relevant than ever before.

2. 1 PRINCIPLES OF HOMŒOPATHY

Having its origin in the modern scientific age, it has the benefit of basing its theory and concept on demonstrable scientific principles and procedures. It is based on the cardinal principles of:

- The law of similar
- The law of single remedy
- The law of minimum dose

Among this the most fundamental is the first 'Law of Similars'. The other laws further refine the above central concept by describing the different phases likely to be experienced in the process of treatment, selection of only one single agent most potent to create in healthy man the same symptoms as are being experienced by the sick persons, and determining the minimum possible dose to be given.

i. Law of Similars

From speculative medicine, Dr. Hahnemann brought in the process of systematic observation and collection of facts. He conducted experiments with cinchona bark in 1790, to deduce the basic homœopathic principle of 'simila similibus curentur' (let likes be treated by likes)i. e., a set of symptoms produced by any substance on a healthy individual can cure similar symptoms in the sick. For example — *Belladonna* cures scarlet fever (a bacterial disease) because the symptoms of Belladonna poisoning are similar to those of scarlet fever; both have burning skin, shining eyes, dilated pupils, dry, sore throat, excitement and delirium. Another example is of the effect of peeling an onion and the consequent watering and burning of eyes and nose. The patients suffering from common cold (a viral disease) having similar watering and burning sensation in the eyes and nose, can be treated by the medicine *Allium cepa,* prepared from red onions. The 'law of similars', as it is known in Homœopathy,

is by no means a new or unknown principle[26]. It finds a mention in the writings of Hippocrates, the father of Western medicine, as also, in ancient Indian medicine.

ii. Law of Single, Simple medicine

Keeping in view the maxim that 'it is wrong to attempt to employ complex means when simple means suffice' Dr. Hahnemann advocated Law of Simplex in Homœopathy. Single, simple medicinal substances are proved on healthy human beings. It is, therefore, unwise to combine them, since it is impossible to foresee how two or more substances might, when compounded, hinder and alter each other's actions on the human body.

iii. Dynamic concept of health, disease and cure

Homœopathy considers health as a dynamic phenomenon where various processes lead to a state of stable equilibrium. Disease by contrast, is regarded as a state of loss of balance resulting from unfavourable internal or external factors. The health and disease are the two ends of the same spectrum. The built-in righting tendency is regarded as responsible for protection against the loss of balance as well as for its restoration. It follows logically from this concept that a physician assists in the process of recovery and does not undertake any measures that interfere with the smooth functioning of the body or deplete it in this capacity. In Homœopathy, true natural chronic diseases are considered to arise from chronic miasms, which are of three types, i. e. psoric, syphilitic and sycotic miasm. Unless these dyscrasias are corrected by suitable anti-miasmatic remedies, chronic diseases may not be cured completely.

iv. Homœopathic Drug Proving

Experiments of drugs on healthy human beings (provings), to accurately assess the capacity of drugs to alter the state of health, is a unique contribution of Homœopathy to the science of pharmacology. The value of having standard preparations of the drug is the pre-requisite of such experimentation. Homœopathy has detailed directions about procurement and processing of drugs. Thus, it has pioneered the setting up of a pharmacopoeia of its own. The symptomatological basis of the Homœopathic Materia Medica has protected it from the ravages of time and kept it 'modern' for all times. Homœopathic Materia Medica largely compiled from such human pharmacological experiments occupies a unique position in understanding of drug effects on mind and body, in their totality.

v. Minimum Dose

Homœopathy is undoubtedly one of the safest medical systems in the world today, because of its use

[26]Roeland van Wijck, Fred A. C. Wiegant. The Similia Principle: An Experimental Approach on the Cornerstorn of Homeopathy. KVC-Verlag, Essen; 2006.

of the minimum dose. The doses used in the Homœopathy range from those that are similar in concentration to some conventional medicines to very high dilutions, containing no material trace of the starting substance. The minute dose means that quantity of a medicine, which produces the least possible excitation of the system and is sufficient to produce the necessary change. The quantity is minimum, but appropriate, for a gentle remedial effect.

vi. Potentization

Discovery and introduction of potentization of drugs revolutionized the medical practice in the 18th century. It enabled the application of inert substances as well as deadly poisonous and toxic substances as safe and effective remedial agents for the cure and also for experimental work on human beings. Potentization facilitated beneficial remedial action by avoiding or mitigating unwanted side effects and aggravations that result from such treatment. The medicines are used as mother tincture (medicinal extract in suitable solvent) or as potency (by succussion or trituration). The dilution fraction of the potencies is on a decimal scale (1:10) or centesimal scale (1:100) or 50 millesimal scale (1:50,000) (Figure 9). In Homœopathy, use is made of both lower dilutions (containing molecules of the starting material) and high dilutions (theoretically not containing any molecules of the starting material anymore).

Figure 9: Potentization process.

2. 2 THERAPEUTIC APPROACHES

Dr. Hahnemann's publication *'Essay on a New Principle for Ascertaining the Curative Powers of Drugs, with a few glances at those hitherto applied* [27]', laid the foundation of therapeutic approaches in Homœopathy. "After describing the theoretical concepts underlying treatment practices of his time, he introduced the basic ideas of the new curative technique: a treatment approach specific to each and every form taken by a condition, the double and inverse effect of medicaments, and therapeutic action

[27]Dudgeon RE, collector & translator. The lesser writings of Samuel Hahnemann. New Delhi. B Jain Publishers (P) Ltd. 1987

due to the similarity of symptoms between those of the artificial condition they induce and those of the 'natural' condition observed in the patient[28].

2. 2. 1 Scientific Clinical Investigation of the disease

Homœopathy advocates accurate, unprejudiced observation as the basis of scientific clinical investigation of disease. It lays emphasis on observing patient as an individual instance of disease, stressing the characteristic features that distinguish one patient from another suffering from the same disease. The physician formulates an idea of the pre-illness personality of the patient, so that the changes brought about by illness are better appreciated. Homœopathy advocates inquiring into past illnesses and medical history of the family to obtain information from the standpoint of familial and hereditary predispositions to disease. The physician must be fully conversant with the course followed by the disease when left untreated so that he/she would be able to assess carefully the influence of the treatment given. It expects the physician to evaluate carefully the mental state, intellectual as well as emotional, especially the changes consequent upon illness. Besides determining carefully, the conditions, which contribute to the development of illness and its continuance, it advocates recognition of unfavorable environmental factors and pay special attention to factors which aggravate or ameliorate the troubles of the patient. Thus the method of clinical investigation and the rational framework evolved were far ahead of time, which are now slowly emerging in general medicine.

2.2.2 Individualized Drug Therapy

Homœopathy has realized in its early development that the constitutional peculiarities of a patient not only determine his/her susceptibilities to the development of the illness, but also the individualizing features that indicate the curative similar remedy. Besides the importance of the environmental factors in the genesis of illness, Homœopathy regards the constitutional peculiarities as of pivotal importance. In both acute and chronic diseases, diagnostic features are generally dependent on the environmental factors and take more time to appear. The early chronological appearance of individualizing features as against diagnostic features enable the selection of the curative remedy much before clinical diagnosis is possible.

The diagnostic and the individualizing signs and symptoms being causally unrelated, can occur in varying combinations. This readily explains how a single remedy could possibly cover a large number

[28]B. Poitevin. Integrating Homoeopathy in health systems; [Internet] Bulletin of the World Health Organization,1999[cited on 1st September 2012]; 77(2). Available from: http://www.who.int/bulletin/archives/77(2)160.pdf

of clinical states and how a single clinical state can claim its correspondence with a large number of remedies. Further, the homœopathic physician is thus in an advantageous position with regard to (a) detection of constitutional tendencies even in pre-clinical stage; (b) clinical diagnosis in the prodromal stage and (c) management, curative as well as preventive.

Homœopathy gives primary importance to the evaluation of the emotional side of illness. The selected remedy has to closely match this aspect and therefore, it is best fitted to normalize the abnormal mental attitudes and predispositions that have led to the illness. The remedy also raises the threshold to emotional environmental stresses. It, thus, helps to restore adaptation. Homœopathy offers unrivaled opportunities in the curative management of psychotic, psychoneurotic and psychosomatic disorders.

Many chronic diseases have a constitutional basis playing an important role in facilitating their occurrence and continuation. A well-selected constitutional remedy affects them favorably and thus, homœopathic treatment offers unlimited potentialities. Homœopathy has evolved itself to the stature of a system of scientific constitutional drug-therapeutics having unassailable foundations.

2. 2. 3 Approach to epidemic Disease

Approach to epidemic diseases with homœopathic intervention involves identification of *genus epidemicus,* which is used as a prophylactic and may also be used as a therapeutic for the epidemic. *Genus epidemicus* is a specific homœopathic remedy selected after observing the complex of symptoms peculiar to a large number of patients suffering from that epidemic. As the strains of causative organisms change, there are definitely some variations in the symptomatology and therefore, in Homœopathy, *genus epidemicus* needs to be identified each time an epidemic breaks out, which makes it more reliable to prevent the disease.

2. 3 SCOPE AND ADVANTAGES

"Tact, sympathy, and understanding are expected of the physician, for the patient is no mere collection of symptoms, signs, disordered functions, damaged organs, and disturbed emotions. [The patient] is human, fearful, and hopeful seeking relief, help and reassurance[29]". This is applicable to practitioners of all therapeutic systems including Homœopathy. The aim of Homœopathy is not only to tackle individual diseases in a person, but to understand the person as a whole and relieve him/her of his/her complaints.

[29]Practice of Medicine. In LongoD. Fauci A, Kasper D, Hauser S, Jameson J, Loscalzo J. et al. Harrison's Principles of Internal Medicine, 18e. New York, Mcgraw-Hill; 2011

Over the years, homœopathic medicines have been used successfully for treatment of various conditions such as acid peptic diseases, anxiety, atopic dermatitis, autism, behavioral disorders, bone fracture healing, conjunctivitis, chicken pox, depression, dysmenorrhoea, headaches, herpes zoster, influenza, injuries, migraine, menstrual irregularities, pre-menstrual syndrome, psoriasis, psychosomatic disorders, phobias, renal calculi, stress disorders, substance abuse, upper respiratory tract infection, vitiligo, common complaints during pregnancy and lactation, diarrhea, colic or dentition complaints in children, etc. A data analysis [30] of about 1.1 million patients attending homœopathic dispensaries in Delhi providing primary healthcare re-affirms these conditions as the most frequent reason for consultation. Homœopathy is also used in conditions such as cancers, HIV/AIDS, terminal illnesses, etc. for providing symptomatic care and improvement in quality of life.

Clinical research studies have been published on different clinical conditions such as acute otitis media, attention deficit hyperactivity disorder, autism, behavioral disorders, benign prostatic hyperplasia, cervical spondylosis, chronic sinusitis, chronic obstructive pulmonary diseases, pre-clinical hypothyroidism, HIV infection, Japanese encephalitis, learning disabilities, menopausal complaints, complaints associated with withdrawal of drug substances, ovarian cysts, scabies, upper respiratory tract infections, urolithiasis, warts, etc.[31] Clinical outcome studies record the patient's self-reported response after treatment. This reflects the validation of age old written experiences but these studies further require pragmatic and randomized control trials[32] which are now being targeted.

Studies have generated evidence in favor of Homœopathy even through randomized control trials and meta-analyses in conditions such as diarrhoea in children, respiratory tract infections in children-attention deficiet hyperactivity disorder, hay fever, menopausal complaints, musculo-skeletal diseases, osteoarthritis, otitis media, premenstrual syndrome, rhinopharyngitis, rheumatoid arthritis, respiratory allergies, etc.[33] However, there are certain limitations to homœopathic treatment; “with a compelling indication for surgery and substitution therapy or with advance pathologies, where

[30]Manchanda RK. Kulashreshtha M.Cost Effectiveness and Efficacy of Homeopathy in Primary Health Care Units of Government of Delhi-A study; [internet] [cited on 2012 August 1] Available from: http://www.delhihomeo.com/paperberlin.html

[31]Central Council for Research in Homoeopathy(CCRH)[Internet]. New Delhi(IN): Ministry of AYUSH © 2011 [cited 2012 Sept 04]. Available from http://www.ccrhindia.org/

[32]The evidence for Homeopathy [Internet]. British Homeopathic Association: [updated 2012 July 18; cited 2012 Sept 1]. Available from: http://www.britishhomeopathic.org/research/the_evidence_for_homeopathy.html

[33]An Overview of Positive Homeopathy Research and Surveys [Internet]. European Network of Homeopathy Researchers. Mar 2007 [cited 2012 Sept 1]. Available from : http://www.homeopathy-ecch.org/images/stories/pdf/positive %20homeopathy%20research%20and%20surveys%20march%202007.pdf

regulative therapy is no longer sufficient. In such cases, it can be used, at best, for palliative alleviation"[34].

Advantages of Homœopathy

- Treatment with homœopathic medicines is safe, effective and based upon natural substances. With the use of single simple substances in micro-doses, medicines are not associated with any toxicological effect and can be safely used for pregnant women and lactating mothers, infants and children and in the geriatric population.
- Medicines, instead of having a direct action on the microorganisms, act on the human system (self-protective) to fight disease process. As such, no microbial resistance is known to develop against homœopathic drugs.
- The mode of administration of medicines is easy. There are no invasive methods and medicines are highly palatable, thereby enhancing their acceptability.
- Lack of diagnosis is not a hindrance for initiating treatment with homœopathic medicines.
- Individualized approach of treatment is in consonance with increasing need for customized treatment, which is being realized in the modern era.
- Homœopathic remedies are not addictive — once relief occurs, the patient can easily stop taking them.
- Treatment is comparatively more cost-effective than other therapeutic systems.

[34]Bornhöft G, Wolf U, Von Ammon K, Righetti M, Maxion-Bergemann S, Baumgartner S, et al. Effectiveness, safety and cost-effectiveness of homeopathy in general practice-summarized health technology assessment. Forsch Komplementmed. 2006; 13 Suppl 2:19-29

RESEARCH AND DEVELOPMENT

Homœopathy as a science evolved from a foundation of theoretical concepts. The scientists today have taken up the challenge to work upon and establish these theoretical constructs on scientific lines. Safety and efficacy studies are an important component of research in Homœopathy. Evidence level of Homœopathy, generated, in several conditions is sufficient to ground its use in the scientific framework of general medical practice[35]. The current scientific advancement has made many studies possible. Research, however, is a complex area and requires interaction of knowledge of Homœopathy, with an in-depth understanding of medicine, bio-technology, physics, chemistry, nanotechnology and social sciences.

Around the world, research is often funded by the government, universities, industries and non-profit foundations. Public funding has been noted in the United States (US), Denmark, Germany, Italy, Norway, UK and India. In the US, the National Centre for Complementary and Alternative Medicine[36] is one of the 27 institutes and centers that make up the National Institutes of Health within the US Department of Health and Human Services, also supports research in Homœopathy. The Karl und Veronica Carstens-Stiftung[37], is the largest foundation in Europe to fund research in complementary and alternative medicine (human and veterinary), including Homœopathy.

Research outcomes are published in various acclaimed journals and the study details and outcomes are available in the databases like Pubmed [38], HomBRex[37], British Homeopathic Library [39], Homeopathic Research Institute[40], European Committee for Homeopathy[41] , LMHI[42] and AYUSH Research Portal[43]. Homeopathy (erstwhile British Journal of Homeopathy) of the Faculty of Homeopathy, UK is an

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[35]Wassenhoven MV. Scientific framework of homeopathy: Evidence-based Homeopathy. Int J High Dilution Res 2008; 7(23): 72-92

[36]Complementary and Alternative Medicine [Internet]. Rockville(MD): National Center for Complementary and Alternative Medicine [reviewed 2012 Jan 13, cited 2012 Sept 04]. Available at: http://nccam.nih.gov/

[37]Hombrex [Internet]. Deimel mountain(Essen) : Karl and Veronica Carstens Foundation. The Donors' Association for German Science © 2011-2012 [cited 2012 Sept 04] Available at: http://www.carstens-stiftung.de/hombrex/

[38]National Library of Medicine [Internet]. Rockville(MD): National Centre for Biotechnology Information (US), National Library of Medicine [reviwed 2009 Oct 28, cited 2012 Sept 04]. Available at: http://www.ncbi.nlm.nih.gov/pubmed/

[39]British Homeopathic Library[Internet].Scotland(UK) : Academic Departments , Glasgow Homoeopathic Hospital: Available at: http://hominform.soutron.net/

[40]Homeopathy Research institute [Internet]. Piccadilly(London): Homeopathy Research Institute © 2010[cited 2012 Sept 04]. Available at: http://homeoinst.org/

[41]European Committee for Homeopathy.[Internet]. European Committee for Homeopathy [cited 2012 Sept 20]. Available at: http://www.homeopathyeurope.org/

[42]Liga Medicorum Homoeopathica Internationalis (LMHI) [Internet]. Liga Medicorum Homoeopathica Internationalis[cited 2012 Sept 04]. Available at : http://liga.iwmh.net/

[43]Ayush Research Portal: Evidence Based Research Data of AYUSH Systems at Global Level[Internet]. New Delhi(IN). © 2011 Department of AYUSH: Available at: http://ayushportal.ap.nic.in/

international peer reviewed indexed journal aimed at improving the understanding and clinical practice of Homœopathy by publishing high quality articles on clinical and basic research, clinical audit, evidence based practice of Homœopathy and is presently running in its 101 year st (www.elsevier.com/locate/homp). American Journal of Homeopathic Medicine by American Institute of Homeopathy has also completed 105 years of publication and is a peer-reviewed scientific journal, specifically intended to meet the needs of physicians involved in the specialty of Homoeopathy (http://www.homeopathyusa.org/journal/). The research studies are also published in various journals of alternative and complementary medicine, many of which are being published in the last 20 years e.g. Journal of Evidence Based Complementary and Alternative Medicine (http://chp.sagepub.com/), the Journal of Alternative and Complementary Medicine (www.liebertpub.com/acm), Focus on Alternative and Complementary Medicine (www.wileyonlinelibrary.com/journal/fact), Complementary Therapies in Medicine (www.complementarytherapiesinmedicine.com), Forschende Komplementärmedizin (Research in complementary Medicine, http://content.karger.com/ ProdukteDB/produkte.asp?Aktion=JournalHome &ProduktNr=224242), etc.

Research in Homœopathy needs to meet the same requirement of research evidence as that of modern medicine, and at the same time necessitates consideration of the unique philosophy of the system. Efforts are made to address key issues of concern for research in Homœopathy[44] through international consensus and debates. The European Committee of Homeopathy has laid down guidelines for drug proving, data collection and clinical verification, and has published a multi-lingual thesaurus to bring in consensus amongst researchers in these areas. Reporting Data on Homeopathic Treatments (RedHot): A Supplement to CONSORT identifies consensus guidelines for reporting homeopathic methods and treatments, which have been recommended for adoption by authors and journals when reporting trials of Homœopathy[45]. Practical set of judgmental domains and accompanying criteria that may be used, within systematic review, to appraise randomized control trials (RCTs) for model validity of homœopathic treatment (MVHT) have been described to identify the concordance between the trial study design and "state of the art" practice for the intervention under investigation[46].

[44]ECH Guidelines [Internet]. Brussel(Belgium): European Committee for Homeopathy [cited 2012 Sept 04]. Available from: http://www.homeopathyeurope.org/publications/guidelines

[45]Dean M.E, Coulter M.K. Fisher P, Jobst K. A. Walach H. Reporting Data on Homeopathic Treatments (RedHot): A Supplement to CONSORT. The Journal of Alternative and Complementary Medicine 2007; 13(1): 19–23

[46]Mathie RT. Roniger H, Wassenhoven MV, Frye J, Jacobs J, Oberbaum M, et al.Method for appraising model validity of randomised controlled trials of homeopathic treatment: multi-rater concordance study. BMC Medical Research Methodology 2012: 12 (49): 1-9

India is completing 50 years of organized research in Homœopathy in the public sector. Government of India constituted a Homœopathic Research Committee in 1963, which identified ways and means of proving homœopathic drugs as an important research area. The Committee also recommended certain institutions for conducting research. In 1969, the Government formed Central Council of Research in Indian Systems of Medicine and Homœopathy (CCRIMH) for conducting systematic research in these systems. It was dissolved subsequently and separate research councils for each system of medicine were constituted, with the formation of 4 separate Council viz. Central Council for Research in Homœopathy, Central Council for Research in Ayurveda and Siddha, Central Council for Research in Unani and Central Council for Research in Yoga & Naturopathy. Presently, in India research through Central Government is encouraged by two routes: Intra-mural by the homœopathic research council i.e. CCRH & by the Extra-Mural Research Scheme of the Department of AYUSH.

3.1 CENTRAL COUNCIL FOR RESEARCH IN HOMŒOPATHY

The Central Council for Research in Homœopathy (CCRH) is an apex organization under the Department of AYUSH, Ministry of Health and Family Welfare, Government of India for undertaking, co-ordinating, developing, disseminating and promoting research in Homœopathy on scientific lines. It was established in 1978, with the following aims:

A. AIMS

- Formulate the homœopathic research projects/programs
- Initiate, develop, undertake and coordinate scientific research in fundamental and applied aspects of Homœopathy
- Exchange information with other institutions, associations and societies interested in the objectives similar to those of the Council
- Initiate collaborations of research studies with other Institutes of Excellence
- Propagate research findings through monographs, journals, workshops and develop audiovisual aids for dissemination of information to the profession and the public.

The policies, directions and overall guidance for the activities of the Council are regulated by the Governing Body. Hon'ble Minister Incharge of AYUSH, Government of India is the president of the Governing Body and has general control on the affairs of the Council (Figure 10).

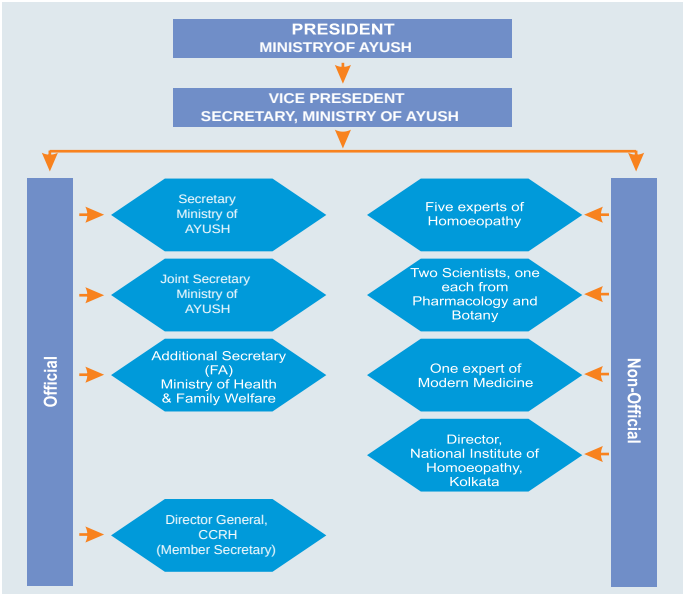

Figure 10: Composition of Governing Body of the Council

The Council adopts the state of art tools and techniques of research management, viz. research prioritization, research programming and research management information system, making India a global leader in the field of homœopathic research. The Scientific Advisory Committee (SAC) headed by a senior scientist of repute, provides direction to the research activities. The SAC helps the Council in formulation, appraisal, implementation, monitoring and evaluation of the research projects. The Ethical Committee of the Council formed as per the guidelines of issued by the national regulatory authorities, looks into the ethical issues involved in each of the individual research studies undertaken by the Council (Figure 11).

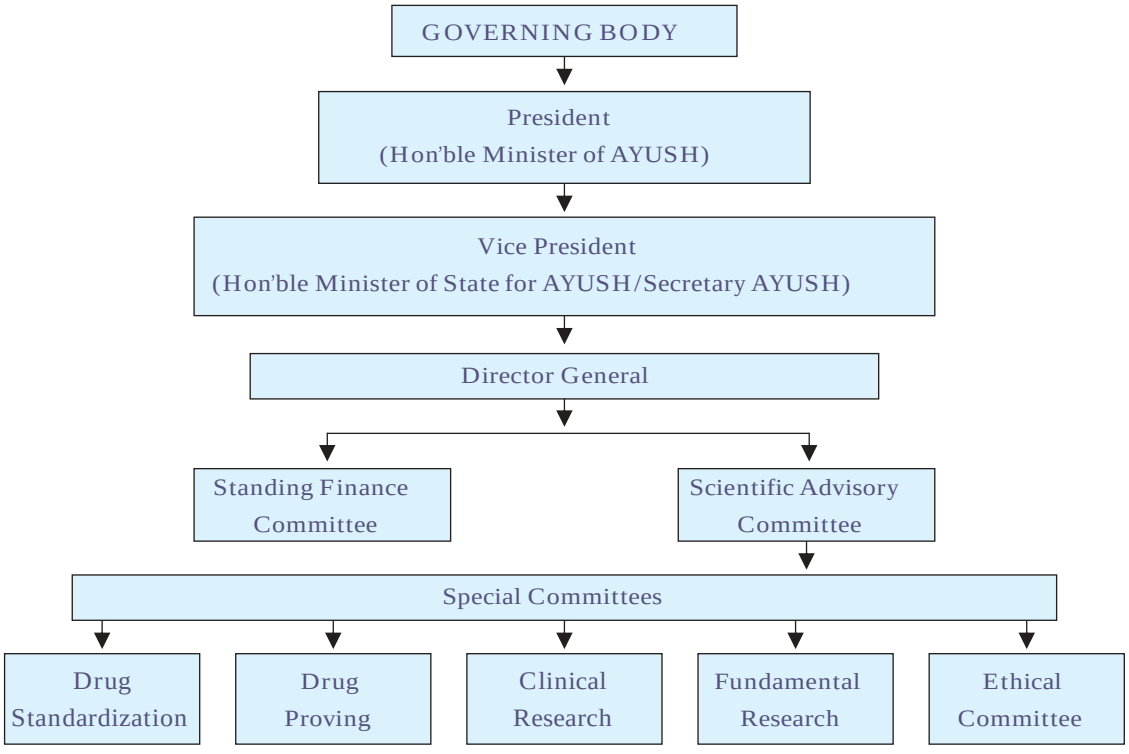

Figure 11: Management of the Council

B. ORGANIZATIONAL STRUCTURE

The Council has its headquarters at Delhi (Figure 12) and a network of 25 institutes and units all over India (Figure 13). These include 02 Central Research Institutes at NOIDA, Uttar Pradesh (Figure 14) and at Kottayam, Kerala (Figure 15) which have fully functional, multi-specialty OPDs and IPD facilities and pathological & radiological laboratories. There are 08 Regional Research Institutes, one Homœopathic Drug Research Institute, 11 Clinical Research Units and Extension Units, one Drug Standardization Unit, one Clinical Verification Unit, one Medicinal Plants Unit where specific research programs are conducted. These Institutes and Units provide OPD services apart from undertaking specific research programmes.

Figure 12: Jawahar Lal Nehru Bhartiya Chikitsa Avum Homœopathy Anusandhan Bhawan, Delhi housing the Central Council for Research in Homœopathy and the Central Council of Homœopathy.

Figure 13: Network of Institutes and Units of CCRH in the country.

Figure 14: Central Research Institute of Homœopathy in NOIDA, Uttar Pradesh, India providing OPD facilities along with 50 bedded IPD conducting clinical research, clinical verification, drug proving and drug standardization studies. The Institute also functions as National Resource Centre.

Figure 15: Hon'ble Minister of AYUSH, Shri Shripad Naik inaugurating the Occupational Therapy and Rehabilitation Centre at Central Research Institute of Homoeopathy in Kottayam, Kerala, India.

C. RESEARCH ACHIEVEMENTS

The Council is the premier and unique research organization in the world fully funded by the Government of India that undertakes studies on modern scientific parameters, using cutting edge technology. The Council conducts multi-centric research studies through its institutes and units and also in collaboration with reputed institutes of excellence. The research is undertaken with the goal that the outcome of the research translates into practice and the benefit of the research is extended to the profession and the public. The research outcomes are published in the form of books, monographs, manuscripts in national and international journals. Salient achievements in the areas of diseases of national importance, epidemic diseases, tribal health, basic research and drug development are as follows:

i. Research on diseases of national importance:

Several clinical trials have been conducted on diseases of national importance. Specific outcomes have been published about the usefulness of Homœopathy on various disease conditions. The outcomes of these studies and of some other studies conducted by the Council are given in section 3.4.1

- Paediatric diarrhoea: Studies carried out on diarrhoea in children have assessed the role of homœopathic medicines with a conclusion that diarrhoea can be managed effectively with homœopathic medicines. A group of medicines were found effective ,viz. *Podophyllum, Chamomilla, Aethusa Cynapium, Mercurius solubilis, Calcarea carbonica, Sulphur* and *Phosphorus.*
- HIV/AIDS: HIV/AIDS has also been a priority area of research. Observational studies on asymptomatic stage of HIV disease showed delay in progression to AIDS in patients using homœopathic medicines. Action of homoeopathic preperations of known immune-modulators also showed delay in progression of the disease.
- Mental health: Council has extensively conducted studies on disorders like schizophrenia, neurotic disorders, drug addiction, psychosomatic conditions, depression, etc. Central Research Institute of Homœopathy, Kottayam is a reputed institute for treatment and research on mental health disorders (Figure 15).
- Diabetes Mellitus: Studies have been conducted on diabetes mellitus and complications of diabetes mellitus. Improvement with homœopathic treatment was seen in cases with diabetic foot ulcers (Figure 16) and with diabetic neuropathy.
- Filaria: Council conducted studies on Filaria in the endemic areas of Odisha for

Figure 16: Diabetic foot ulcer in a research case before and after treatment

more than twenty years. Three homœopathic drugs, *Bryonia, Rhus toxicodendron* and *Apis mellifica* were identified as most useful in acute filariasis. Further, prescribing indications and treatment approach of various stages of filariasis was outlined.

ii. High end research:

Council in the recent years has undertaken studies to substantiate action of homœopathic medicines. Study undertaken in collaboration with the Bose Institute, Kolkata gave positive leads on pathway of action of homœopathic medicines where in drugs showed action in regulation of p53 gene on cancer cell lines. Reverse pharmacology study undertaken with Dr. ALM Post Graduate Institute of Basic Medical Sciences, Chennai identified action of Berberis vulgaris, a well known drug for urolithiasis in Homœopathy, on molecular events leading to calcium oxalate crystal deposition in mice. Results of some of the collaborative studies undertaken by the Council are given in section 3.4.2

iii. Homœopathy for tribal health care:

Council had established special research units in tribal areas such as Agartala, Dimapur, Shillong, etc. These units provided homœopathic treatment to the tribals for their day to day problems such as amoebiasis, dysentery, gastro-enteritis, helminthiasis, malaria, rhinitis, sinusitis, tonsillitis, bronchial asthma, etc. The units popularized Homœopathy in these regions and conducted surveys in their areas to compile data of diseases prevalent in those areas, food habits, local customs and folklores related to health practices.

iv. Drug development:

For a drug to be introduced for the use of profession it has to go through a process of identifying the standardization parameters for quality manufacturing, homœopathic drug proving followed by clinical verification. Council has continued to take up these three activities since its inception. Standards have been laid down with respect to 116 drugs under drug standardization programme for inclusion in the HPI. Ninety two (92) drugs, including 11 new drugs, have been proved to know the symptoms generated on healthy volunteers. Clinical verification of 87 drugs has been completed. The data of these drugs have been published for the use of profession through books, research articles and monographs. Council has introduced 36 drugs of Indian origin for the use of profession through the above mentioned process of drug development. Details of these studies are given at section 4.2 to 4.4.

v. National Campaign on Homœopathy for Mother and Child Care

Keeping in view the strength of Homœopathy in the disease conditions of pregnancy, puerperium and lactation and in childhood disorders, the Department of AYUSH launched a National Campaign on Homœopathy for Mother and Child Care in 2007. The Council operationalized and coordinated the campaign, which was conducted till 2012. A national workshop on Homœopathy for Healthy Mother and Happy Child was organized to sensitize all stake holders i.e. policy makers, program evaluators,

Figure 17: Training manual on Homoeopathy for Mother and Child care, prepared by the Council under WHO project for capacity building and training of homoeopathic practitioners.

opinion makers, homœopathic and allopathic practitioners, NGOs, etc. Thirty four state level workshops were organized in all the states followed by 93 district level orientation workshops. More than 1600 community awareness camps and clinics were organized by the Council through its institutes, units and through homœopathic medical colleges, where in more than 4 lakh patients were benefitted. The campaign also focused on capacity building and training of homœopathic physicians in dealing with women and children disease conditions. The Council prepared three training manuals (obstetrics, pediatrics and general management) with WHO country office in India (Figure 17). Fourty three state level training of trainers and 55 district level training programmes were organized for training homœopathic practitioners on these modules.

vi. Research in epidemic diseases:

Council has been actively involved in disease epidemic research. The first epidemic camp on conjunctivitis was conducted in 1981. Epidemic camps have since then been conducted on diseases like Dengue, Bacillary Dysentery, Jaundice, Measles, Typhoid, Plague, Chikungunya, etc. A number of camps have been conducted during outbreaks of epidemics of Japanese Encephalitis. On the basis of experiences gained during these camps, in vitro and in vivo studies of homœopathic medicines were undertaken on Japanese Encephalitis virus. *Belladonna 200C* significantly decreased pock count of the virus on chorio-allantoic membrane in the in-vitro study. In mice model, *Belladonna 200C* showed protective effect against Japanese Encephalitis infection (Figure 18). Based on these positive results, a clinical trial on viral encephalitis is now being conducted at Gorakhpur.

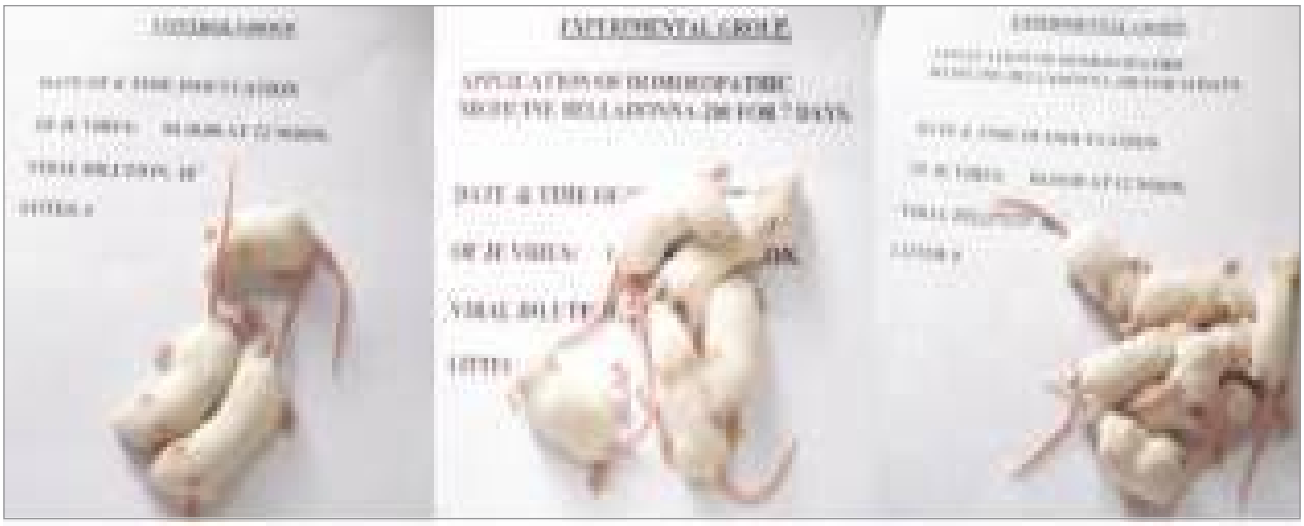

Figure 18: Survived suckling mice after 30 days of inoculation of Japanese Encephalitis virus

D. ONGOING RESEARCH ACTIVITIES

The Council, presently, is in a strengthening phase, where the achievements of the past have been consolidated, new studies are being undertaken, new avenues for research are being explored and research studies are being conducted in coordination with experts and organizations of national and international repute. Besides intra-mural research projects, Council is also providing technical input and monitoring research projects funded under extra-mural research scheme of Department of AYUSH.

i. Clinical Research Programme:

Clinical research studies have gradually evolved from low evidence based observational studies to rigorous multi-centre randomized controlled trials. The clinical research studies involve coordination with scientist and organizations of repute. High evidence based trials with double blinding, objective assessment criteria, statistical analysis, etc. are in the process of development and implementation. The outcomes of these studies are published in peer reviewed journals for dissemination at national and international levels. Presently, RCTs clinical research studies are ongoing on 11 conditions, viz. Benign Prostatic Hyperplasia, Chronic Rhino-sinusitis, Cervical spondylosis, Diabetic Distal Symmetric polyneuropathy, filariasis, menopause, Urolithiasis, HIV/AIDS, Schizophrenia, Autism, Alcohol abuse. An observational study on breast cancer is also ongoing in Kolkata. Research protocols on 10 conditions, in consultation with experts, are being formulated in light of the latest research guidelines issued by organizations like WHO and ICMR.

ii. Collaborative Research with Institutes of Excellence:

Eight studies are ongoing in collaboration with institutes of excellence such as Central Drug Research Institute, Lucknow; All India Institute of Medical Sciences, Delhi; Bose Institute, Kolkata, etc. Avenues for new collaborations are being explored with organizations across the country.

iii. Drug Research:

A target based approach is adopted to identify new drugs for drug standardization and drug proving. Clinical verification of 23 drugs is ongoing, on a standardized research protocol formulated by the Council.

iv. Survey, Collection and Cultivation of Medicinal Plants:

Survey of Medicinal Plants and Collection Unit (SMPCU) of CCRH, established in 1979 is located at Emerald, Nilgiri District, Tamil Nadu. It conducts survey, collection and cultivation of medicinal plants used in Homœopathy and supplies raw drug samples to the Central Research Institute (H), Noida and Drug Standardization Unit (H), Hyderabad for standardization studies. The Unit also cultivates exotic (Figure 19) and indigenous medicinal plants used in Homœopathy and maintains the garden, which is spread in 12.7 acres of land.

Figure 19: Cineraria maritima plantation at research garden at SMPCU, Tamil Nadu, India

v. Linking research with education

To inculcate research aptitude in students, Council is working in coordination with the academicians and has initiated a scheme of financial grant to students to conduct research as a part of their PG program. Some publications of the Council cater to the academicians and students and have been prepared keeping in view the syllabus prescribed at undergraduate and post graduate levels.

vi. Documentation & IEC:

Research work of the Council in different fields is documented and brought out in the form of various publications aimed at scientific community and for the general public. Documentation and Publication section is the mirror of the Council's activities and achievements being carried out. The section aims to produce all the publications in a presentable, reader friendly language without distorting the actual image of the research work.

The regular publications of the Council released quarterly are:

1. CCRH News: CCRH News publishes the up-to-date information about CCRH, conglomeration of the research activities and events undertaken under the aegis of Ministry of AYUSH. As a quarterly publication, it reaches regional offices under Ministry of AYUSH throughout the country, homoeopathic medical colleges and the policy makers in homeopathy. It brings about the coverage of the Council's activities, all the technical and the administrative meetings, the participation of the Council in various events and the capacity building of the scientists.

2. Indian journal of Research in Homoeopathy IJRH: The first peer reviewed journal of Asia has gained laurels for the Council in recent times. It is now published as an online open access journal and serves to disseminate the research work of the scientists of our Council and of the homoeopathic researchers, the world around. The online manuscript management system of IJRH is just a click away at www.journalonweb.com/ijrh wherein the manuscripts can be uploaded and a stringent peer review process is carried out making it worthy of publication in IJRH. The online manuscript system of IJRH has made the functioning of the journal convenient for the authors, editors and the reviewers as they can work from their log in area, from anywhere around the world in a time bound manner with automated e-mail notifications generated from the system buzzing as a reminder from time to time for the completion of their assigned work. The abstract of articles presented in this journal are also published in Hindi to facilitate wider readership nationwide. All the previous and present issues of the journal are accessible and available online at www.ijrh.org. Another impressive technological advancement and facility for IJRH to be carried in smart phones is the development of “Quick Response Code” present on the first page of the article by which one can reach to the full text of that particular article on the journal's website. The online open access IJRH is geared up for its splendor in the field of homoeopathic research in the time ahead.The journal is indexed with Caspur, CNKI (China National Knowledge Infrastructure), EBSCO Publishing's Electronic Databases, Google Scholar, National Science Library, OpenJGate and SCOLOAR. Further, efforts are being taken to make Council's journal 'Indexed' in SCOPUS and PUBMED.

To enhance the quality of services, Council hqrs. has been accredited ISO:9001-2008, and is also building up its institutes as centers of excellence.

E. PUBLIC HEALTH INITIATIVES BY THE COUNCIL

i. Under directions from Ministry of AYUSH, Central Council for Research in Homoeopathy developed a program on Homoeopathy for Healthy Child. The program has 2 components namely, 'Homoeopathy for teething complaints in children' and 'Integration of Homoeopathy with Rashtriya Bal Swasthya Karyakram (RBSK)'. The component on 'Homoeopathy for teething complaints in children' focuses on children in the age group of 6 months to 3 years and aims at promotion of healthy teething by using bio-chemic medicines. Teething associated problems such as diarrhea, fever, loss of appetite, irritability are treated with homeopathic medicines. The component on 'Integration of Homoeopathy with RBSK' focuses on children in the age group of 0 to 18 years and aims at screening, early detection and early intervention of Defects, Delays, Deficiencies and Diseases identified under RBSK. The program is being undertaken on pilot mode in 10 blocks in 6 districts as follows:

- Dhirenpara, Central Zone block of Kamrup (Metro), Assam coordinated by RRI Guwahati
- Urban slum Mayapuri of Delhi coordinated by CCRH Headquarters
- Vikramgarh block of Palghar, Maharashtra RRI Mumbai
- Niali, Kantapada block of Cuttack, Odisha coordinated byDPRU Bhubaneswar
- Bisrakh, Dadri blocks of GautamBudh Nagar, Uttar Pradesh coordinated by CRI Noida
- Bhatahat, Chargwan blocks of Gorakhpur coordinated by Clinical Trial Unit Gorakhpur

The ANM and ASHA workers in these blocks have been trained, where in, common problems associated with primary teething were detailed. A small medicine kit compriting of common homoepatic and biochemic medicines has been prepared. The Anganwadi workers in the blocks have been sensitized of the teething related problems in children and have been requested to refer the children to the local PHC or to the ANM/ASHA in case of children developing teething related complaints. Records of children are being maintained by the ASHAs. The children in the age group of 6 months to 1 year are being given *Calcarea phos.* 6X on regular basis to promote healthy dentition. Children above the age of 1 year are being given *Calcarea phos.* 6X in case of teething related complaints. Children with minor episodes of diarrhea have been given homoeopathic medicines in consultation with the homoeopathic physicians.

The program is being conducted in coordination with the district and block level authorities.

ii. National programme for prevention and control of cancer, diabetes, cardiovascular diseases & stroke

National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke (NPCDCS) was launched by Ministry of Health& Family Welfare (MOH&FW), Govt. of India in July 2010 and it covered 21 states across the country by 2012. Integration with AYUSH is one of its mandates in the NPCDCS programme. It was decided to integrate Homoeopathy in NPCDCS program of MOH&FW and utilize the services of the Homoeopathic doctors and yoga experts in Krishna (Andhra Pradesh) and Darjeeling (West Bengal) districts. The program aims to aid in reduction of Non Communicable Diseases (NCDs) burden by providing primary prevention of common NCDs through an integrated approach of health education (promotion of healthier life styles including yoga), timely screening of population for early detection/diagnosis of NCDs and early management of NCDs through homoeopathic treatment alone or as add on to standard care. Accordingly, the Council has developed the operational guidelines for implementation of the program through its centers i.e. Regional Research Institute (H), Gudivada and Clinical Research Unit (H), Siliguri.

3.2 EXTRA MURAL RESEARCH [47]

The Ministry of AYUSH supports scientists in the country to conduct research in Homœopathy. The scheme encourages research in high-priority areas to ascertain efficacy of treatment, better understanding of homœopathic principles and respond to various public health concerns.

Objectives of the scheme:

- To support research and development in Extra Mural mode for treatment of prioritized diseases.
- To standardize/validate and develop scientific evidence for safety, efficacy and quality of AYUSH drugs & therapies.
- To make scientific exploration of AYUSH system with interdisciplinary approaches.
- To achieve need based outcome in a priority areas.
- To develop the potential of human resource in AYUSH system specially to inculcate aptitude and expertise to AYUSH systems.

Research is encouraged on pre-defined priority areas including Fundamental Concepts, Basic Principles & Theories of AYUSH Systems, Standardization / Validation of Safety, Efficacy & Quality different AYUSH classical drugs, Therapies, Intervention & approaches / Treatment modalities,

[47]Extra Mural Research Scheme [Internet] . Ministry of AYUSH; [updated 2015 Jan 16;cited 2015 Feb 12] Available at http://indianmedicine.nic.in/writereaddata/linkimages/2690310857 Final%20revised%20Scheme%2016012014.pdf

AYUSH Pharmaceutical Research (New Drug development), Clinical Trials, Scientific exploration & operational research of metallic compounds, & other herbomineral preparations, Drug interaction, bioavailability & dose determination studies, AYUSH intervention in public health career, Epidemics diseases & Genus Epidemicus, Geriatric Health Care, Mental Health & cognitive disorders, Anaemia & nutritional disorders, Maternal & Child health etc., Systemic review and meta-analysis of AYUSH research studies, Literary research & scientific documentation and development of data base, Health Economics related to AYUSH, Role of ASU & H Intervention in Veterinary Health, Development of software & Bio instrumentation related to AYUSH.

Such an endeavour of the Ministry of AYUSH has resulted in the generation of an evidence-based support in favour of efficacy of homœopathic drugs in diseases like autism, autoimmune thyroiditis, benign prostatic hypertrophy, cervical spondylosis, diarrhea, learning disabilities, ovarian cyst, scabies, trophic ulcers of leprosy, uterine fibroids, etc. Studies have been undertaken to investigate the antioxidant, anti-cancer potential, neuro-protective effects of the homœopathic drugs in animal models. The details of the scheme are available on the website of Ministry of AYUSH [47], EMR schme and on the website of the Council[31]

3. 3 AYUSH RESEARCH PORTAL[43]

A web portal (Figure 20) to showcase important research publications of AYUSH systems has been developed. It aims at providing information about these systems for wider acceptance as well as to encourage inter-disciplinary research.

The information provided is categorized into individual AYUSH medical systems against a standard set of medical conditions, based on WHO disease classification ICD-10 (International Classification of Diseases -10), and navigation is according to ICPC's (International Classification of Primary Care) 17 categories. It permits search of research articles with title, authors, scholars, guide, co-guide, designation, department, institution, address, journal, university, abstract, keywords, body system and disease.

Research abstracts of Homœopathy studies available online (as on May 2015)

Clinical research	:	640
Pre-clinical research	:	142
Drug research	:	390
Basic and fundamental research	:	1075

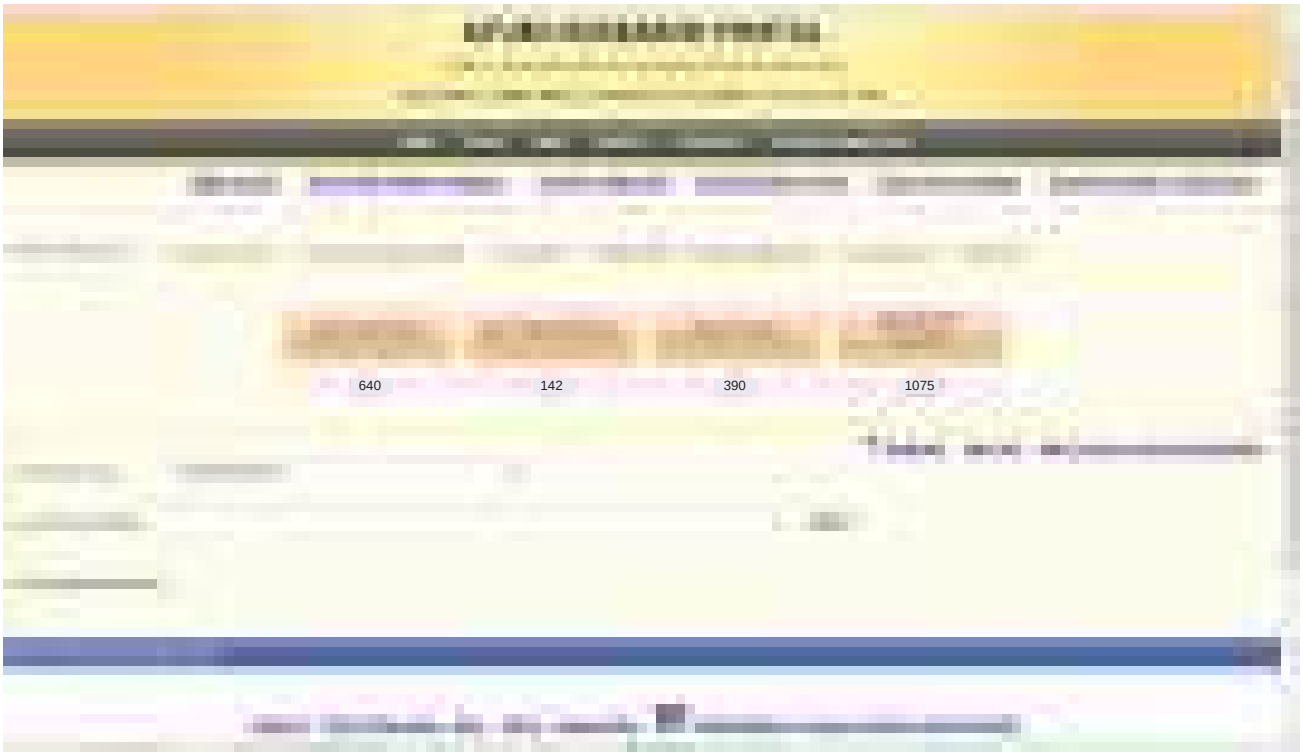

Figure 20: Home page of AYUSH Research Portal.

3.4 RESEARCH OUTCOMES

Research outcomes of some clinical research studies and basic research studies conducted by the

[48]Witt C, Albrecht H. Cf. for the state of the art: New Directions in Homeopathy Research: Advice from an Interdisciplinary Conference. KVC-Verlag Essen 2009.

Evidence levels of the enlisted studies are graded as recommended by the WHO:

Table 4 WHO Recommendations for grading[49] of clinical research studies:

Grade	Recommendation
A (Evidence levels quality Ia, Ib)	Requires at least one randomized controlled trial as part of the body of literature of overall good and consistency addressing specific recommendation.
B (Evidence levels IIa, IIb, III)	Requires availability of well-conducted clinical studies but no randomized clinical trials on topic of recommendation.
C (Evidence level directly IV)	Requires evidence from expert committee reports or opinions and/or clinical experience of respected authorities. Indicates absence of applicable studies of good quality.

[49]World Health Organization. General Guidelines for Methodologies on Research and Evaluation of Traditional Medicine; [internet] [cited on 2012 August 17]. Geneva: WHO; 2000. Available from: http://whqlibdoc.who.int/hq/2000/WHO_EDM_TRM_2000.1.pdf

Dermatology

Homœopathy is known for its positive effects in treatment of dermatological disorders. However, the number of well designed particularly controlled studies is limited and more focused studies are desirable.

Table 5 Studies in Dermatology

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Acne vulgaris study	Observational	31	Out of 31 enrolled participants, 29 completed the 6-months follow-up. Two subjects did not report after 2-3 months but were included under Intention-To-Treat (ITT). Though there were overall statistically significant results in respect of Lesion counts, GAGS and Acne QoL score ($P < 0.001$) but } no effect was seen in inflammatory lesions.	C
2.	Acne vulgaris	Observational study	32	Out of 34 human subjects administered Arctucm lappa, 32 completed the follow-up. Statistical significant results were seen in lesion counts, GAGS and Acne-QoL score (p value <0.001). Lappa has shown positive effects in the treatment of acne especially of inflammatory type.	B
3.	Post-burn	Case report hypertrophic scar	1	This is a case report of a 23 year old male with post-burn HSc after acid burn injury on his left jaw. The homoeopathic medicine Silicea was prescribed in 30 th potency on the basis of the totality of symptoms followed by repertorization; though only three doses of *Silicea* were prescribed at baseline during the course of treatment followed by placebo, there was a marked improvement in HSc as well as in associated complaints.	C

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
4	Furunculosis	Observational study	397	There was significant difference (p= 0.0001) in the mean total furunculosis symptom score developed by the CCRH favouring homœopathic care. *Hepar sulphuris, Antimonium crudum* and *Calcarea carbonica* were most useful amongst the pre-defined trial medicines.	B
5	Scabies	Randomized Placebo controlled trial	300	The results were statistically significant (p <0.01) in Homœopathy group compared to placebo. In the constitutional group only 2% children showed a recurrence.	A
6	Lichen simplex chronicus	Case series	27	*Hydrocotyle* was useful in mitigating itching due to lichen planus.	C
7	Vitiligo	Observational study	207	*Arsenicum sulphuratum flavum, Arsenic album* and *Nitric acid* were found to be useful. *Syphilinum* when used as intercurrent remedy was found effective.	*B*
8	Warts	Case series	52	Warts were completely resolved in 47 cases. *Thuja* was most frequently prescribed and found useful.	C
9	Molluscum contagiosum	Case series	30	Fifteen patients had full resolution and 12 patients improved. The homeopathic medicines most useful were *Natrum sulphuricum, Sulphur* and *Natrum muriaticum.*	C
10	Vitiligo	Case report	1	After a period of treatment for 17 months with two doses of *Phosphorus* 30C, there was total disappearance in hypopigmented patches.	C

1. Miglani A, Manchanda RK. Azadirachta indica in treatment of acne vulgaris-an open-label observational study. Indian Journal of Research in Homœopathy 2014;8 (4): 218-223
2. Miglani A, Manchanda RK. Observational study of Arctium lappa in the treatment of acne vulgaris.Homeopathy. 2014 Jul;103(3):203-7.

3. Arya BS, Siddiqui VA, Dixit RP.Treatment of post-burn hypertrophic scar with homoeopathic medicine . Indian Journal of Research in Homœopathy 2013;7 (2): 91-94
4. Nayak C, Singh V, Singh K, Singh H, Chakraborty PS, Kaushik S, et al. A prospective multicenter observational study to evolve the usefulness of the nine predefined homœopathic medicines in Furunculosis. Homœopathic Links; Spring 2010; 23: 60-3.
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6. Gupta R, Manchanda RK, Arya B.S. Homœopathy for the treatment of lichen simplex chronicus: A case series. Homœopathy 2006; 95(4): 245-7.
7. Prasad RVR, Raveender Ch., Bharatha Lakhsmi, Singh K, Vichitra AK, Oberai P, et.al. Clinical evaluation of predefined homœopathic medicine in Vitiligo. Clinical Research Studies-Series II. New Delhi: CCRH; 2009: 85-92.
8. Gupta R, Bhardwaj OP, Manchanda RK. Homœopathy in the treatment of warts. British Homœopathic Journal 1991; 80(2): 108-11.
9. Rajendran ES. Molluscum contagiosum: a case series. Homeopathy 2002; 91(4): 255-9.
10. S. Ravi Kumar. A case of vitiligo treated with Phosphorus. Indian Journal of Research in Homœopathy 2008; 1(1): 49-57.

Endocrinology and Lifestyle Disorders

As a result of industrialization, socio-economic development, urbanization, changing age-structure, changing lifestyles, India is facing a growing burden of non-communicable diseases; 346 million people worldwide have diabetes. More than 80% of people with diabetes live in low- and middle-income countries[50]. Hypertension is a growing problem of concern across the world, responsible for mortality secondary to cardiovascular, cerebro-vascular or renal causes. The development of effective, safe and efficient treatment regimens is, therefore, imperative. Studies conducted so far form the basis on which further studies/RCTs can be conducted.

[50] Diabetes [Internet]. Geneva(Switzerland). World Health Organization [cited 2012 Sept 1] Available from: http://www.who.int/mediacentre/factsheets/fs312/en/index.html

Table 6 Studies on endocrinological and lifestyle disorders

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Sub-clinical hypothyroidi-sm	Single blind placebo controled pilot studytreatment,	80	In 77.5% of patients on homœopathic TSH levels came within normal range.	B
2.	Sub-clinical hypothyroidi-sm	Randomized, Single blind placebo controlled pilot study	194	The post treatmentserum TSH (Group A and C) returned to normal limits in 85.94% of verum and 64.29% of controls ($p < 0.006$), while serum AntiTPOab titers (Group A and B) returned withinnormal limits in 70.27%of verum and 27.02%controls ($p < 0.05$). Eight children (10.5%) progressed to overt hypothyroidism (OH) from control group. A statistically significant decline in serum TSH values and antiTPOab titersindicates that the homeopathic intervention has not only the potential to treat SCH with or without antiTPOab but may also prevent progression to OH.	
3.	Diabetes mellitus	Observational study	247	247 patients suffering from diabetic distal symmetric polyneuropathy were given individualized homoeopathic medicine for period of 12 months. A statistically significant improvement in DDSPSS total score ($p = 0.0001$) was found at 12 months from baseline. Most objective measures did not show significant improvement. Lycopodium clavatum ($n = 132$), Phosphorus ($n = 27$) and Sulphur ($n = 26$) were the medicines most frequently prescribed. Adverse event of hypoglycaemia was observed in one patient only.	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
4.	Diabetes Mellitus	Single blind randomised placebo-controlled, crossed trial	90	After 12 months of treatment 70% from the constitutional group improved as compared to 10% from the organ remedy group and 7% from the placebo group.	A
5.	Diabetes Mellitus	Observational study	100	83 patients showed improvement with *Rhus aromaticus* Q added on to regular allopathic hypoglycemic agents.	B
6.	Diabete Mellitus	Observational study	88	With *Cephalandra indica* Q as add on drug to regular hypoglycemic agents, the mean fasting blood sugar reduced from 138±24.3mg/dL before treatment to 115.8±26.3mg/dL after treatment. Similarly post prandial blood sugar reduced from 265.0±44.6mg/dL before treatment to 204.7±39.9 mg/dL after treatment.	B
7	Diabetic foot	Observational study	63	The mean difference in the diabetic foot ulcer assessment score developed by the Council, before and after treatment was found to be statistically significant (p=0.0001) and ulcer healed completely in 57 patients.	B
8	Essential Hypertension	Observational study	232	There was significant reduction (p=0.0001) in diastolic and systolic blood pressure in both the groups: Homœopathy as an add-on to allopathic medicines and homœopathic medicines alone.	B
9	Essential Hypertension	Observational study	109	Among the pre-identified medicines, *Glonoine* and *Belladonna* were most frequently indicated and useful medicines.	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
10.	Essential Hypertension	Double-blind randomized controlled trial	132	After six months of intervention, mean Systolic Blood Pressure (SBP) reduction was 26.6 mm Hg (95% CI 21.5, 31.7) in the homoeopathy group and SBP increased by 3.6 mm Hg (95% CI -8.7, 1.5) in the placebo group. Similarly, the mean Diastolic Blood Pressure (DBP) in the homoeopathy group reduced by 11.8 mm Hg (95% CI 9.2, 14.4) and increased by 1.6 mm Hg (95% CI -3.6, 0.4) in the placebo group. Repeated measures ANOVA also showed significant difference (P=0.0001) between the groups. *Natrum muriaticum, Calcarea carbonica, Sulphur, Thuja occidentalis, Nitric acid* and *Medorrhinum* were frequently prescribed.	A
11	Hyperlipo-proteinemia	Observational study	293	*Abroma augusta, Gelsemium, Lycopodium, Bryonia alba, Pulsatilla, Nux vomica* were most frequently indicated and useful medicines.	*B*
12	Diabetic distal symmetric polyneurop-athy	Case report	1	*Phosphorus* 30, 200 and 1M administered at varying intervals gave both symptomatic relief and improvement in peripheral nerve } conduction.	C
13	Colloidal goiter	Case report	1	*Sulphur* followed by *Lycopodium* helped in regression of the goitre completely.	C

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4. Tiwari ML. Diabetes mellitus - defining scope and clinical approach for homœopathic management. Indian Journal of Research in Homœopathy 2008;2(3):28-36.
5. Baig H, Singh K, Sharma A, Kaushik S, Mishra A, and Chug S. Rhus aromaticus in management of Diabetes mellitus. Clinical Research Studies-Series II. New Delhi: CCRH; 2009:21-7
6. Baig H, Singh K, Sharma A, Oberai P, Kaushik S, Nayak D, et al. Role of Cephalandra indica Q in the management of Diabetes mellitus as an add on medicine along with conventional anti-diabetics. Indian Journal of Research in Homœopathy 2008;2(3):22-7.
7. Nayak C, Singh V, Singh K, Singh H, Gupta J, Ali Mohd.S, et al. A prospective observational study to ascertain the role of homœopathic therapy in the management of diabetic foot ulcer. American Journal of Homeopathic Medicine 2011; 104(4):166-76.
8. Baig H, Singh K, Sharma A, Kaushik S, Mishra A, and Chugh S. Essential Hypertension Clinical Research Studies - Series II. New Delhi: CCRH; 2009:29-41.
9. Lakhera BC, Dhawan IM, Manjushree, Kaushik S, Mishra A, and Chugh S. Essential Hypertension (Drug related study). Clinical Research Studies-Series II. New Delhi: CCRH; 2009: 43-9.
10. Saha S, Koley M , Hossain S I , Mundle M , Ghosh S , Nag G , Datta AK, et al. Individualized homoeopathy versus placebo in essential hypertension: A double-blind randomized controlled trial. Indian Jopurnal of Research in Homoeopathy 2013; 7(2):62-71
11. Govekar JP, Paul VK, Singh K, Oberai Praveen, and Roja Varanasi. Hyperlipoproteinemia. Clinical Research Studies- Series II. New Delhi: CCRH; 2009: 63-70.
12. Devi P and Biswas S. Diabetic distal symmetric polyneuropathy: A Case study. Indian Journal of Research in Homœopathy 2009; 3(1):45-53.
13. Sharma B. A Case of Colloidal Goiter. Indian Journal of Research in Homœopathy 2011; 5(2):40-6.

Filariasis

Filariasis is a public health problem in India. The Council has conducted long-term studies on Filaria in endemic areas in Odisha and Andhra Pradesh and has published a monograph on 'Lymphatic Filariasis'.

Table 7 Studies on Filariasis

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Filariasis	Controlled trial	167	Filiariasis cases treated with homœopathic medicines showed a better improved/not improved ratio (2.0) compared with cases treated with placebo (0.46). The results indicate that the improvements derived from homœopathic medicines are statistically significant ($p<0.001$). *Rhus toxicodendron* in case of adenitis and mastitis, *Apis mellifica* in lymphoedema, *Rhododendron* in genital affections showed significant improvement compared to placebo.	B
2	Filariasis	Single blind follow-up study	280	Homœopathic treatment effectively reduced the frequency of filarial fevers by 20% ($P<0.05$) among amicrofilaraemic cases. *Rhus toxicodendron, Apis mellifica, Sulphur* and *Thuja* were the most useful medicines.	B
3	Filariasis	Observational study	11445	6268 patients had complete absence of clinical events during the treatment and no recurrence during follow up period of 3-5 years. Grade I and Grade II lymphoedema disappeared or reduced after treatment.	B

1. Subramanyam VR, Mishra N, Rai Y, Rakshit G, and Pattnaik NM. Homœopathic treatment of filariasis: Experience in an Indian rural setting. British Homœopathic Journal 1990; 79(3): 157-160.
2. Kumar A and Mishra N. Effect of homœopathic treatment on filariasis: A single blind 69-month follow up study in an endemic village in Orissa. British Homœopathic Journal 1994; 83(4): 216-9.

3. Mishra N, Murthy GSN, Bhanumurthy K, Mal PC, Ramesh D, Ghosh SK et al. Filariasis. Clinical Research Studies -Series 1. New Delhi: CCRH; 2008: 53-66.

Gastroenterology

Homœopathy can be used beneficially in treating disorders of gastro-intestinal system such as diarrhoea, irritable bowel syndrome and gastroenteritis. Paediatric diarrhoea is a major public health problem in India, resulting in high morbidity and mortality in infants and children. Research studies carried out so far indicate potential use of homœopathic medicines to treat diarrhoea in children.

Table 8 Studies on Gastroenterological conditions

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Haemorrhoids	Case report	1	The case reported here is that of an internal haemorrhoids in a 12-year-old child, who was treated successfully with homoeopathic medicine. The patient has been observed for more than 2 years without recurrence. Photographs were taken before and after treatment to record changes in the condition. Non-recurrence of complaint in the past two and half years suggests that a 'near permanent' cure is achievable through individualised homoeopathic treatment.	C
2.	Haemorrhoids	Multicentric randomized single-blind placebo-controlled trial	278	After 90 days of treatment, a significant difference (P = 0.0001) was found in the median area under the curve (AUC) for bleeding {difference: -64.0 [95% confidence interval (CI): -90.0, -31.4]}, pain [-243.0 (-280.9, -202.4)], heaviness [-208.0 (95% CI: -245.5, -174.9)], and itching [-198.5 (-246.4, -158.5)] between the	

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				Homoeopathy and placebo groups. Significant differences (P < 0.001) were also found in the World Health Organization Quality of Life-BREF (WHOQOL-BREF) physical domain [difference 7.0 (95% CI: 6.0, 12.0)], psychological domain [7.0 (6.0, 12.0)], and environmental domain [6.0 (-0.001, 11.9)]. Most frequently prescribed medicines were : *Nux vom., Phosphorus, Sulph.*	
3	Acute Diarrhoea	Observational study	327	The difference in the mean number of stools and diarrhoea index score (before and after treatment) developed by CCRH was found to be statistically significant (p=0.0001). *Podophyllum, Chamomilla, Aethusa cynapium, Calcarea Carbonica* and *Mercurius solubilis* were found to be most useful medicines.	
4.	Diarrhoea	Randomized placebo-controlled single blind study	300	The indicated acute homœopathic medicines followed by constitutional medicines showed significant (p<0.05) impact in reducing episodes of diarrhoea in children with recurrent episodes of diarrhoea.	
5	Paediatric diarrhoea	Observational study	405	*Chamomilla, Podophyllum, Cinchona officinalis, Nux vomica, Sulphur* and *Ipecacuanha* were found to be frequently indicated and useful.	
6	Dysentery	Observational study	603	*Nux vomica* was found to be most indicated and useful medicine.	
7	Irritable Bowel Syndrome	Observational study	214	*Nux vomica* was found to be most useful in alleviating the symptoms and signs of Irritable bowel syndrome.	

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
8	Gastroenteritis	Observational study	370	The difference in the total mean gastroenteritis symptom score developed by the Council, was statistically significant (p= 0.0001). *Nux vomica, Pulsatilla, Arsenicum album* and *Cinchona officinalis* were found to be most useful medicines among predefined trial medicines.	
9	Cholelithiasis	Observational study	267	During the course of study *Fel tauri* was found to reduce duration, frequency of acute manifestations and intensity of painful attacks. In 33 patients, it helped in either dissolution of stone or reduction in number and size of stone. *Magnesia phosphorica* was the most useful medicine in acute attacks of gall stone colic.	

1. Rath P, Kaur H. A case of haemorrhoids in a 12-year-old boy. Indian Journal of Research in Homoeopathy, 2014; 8(1): 37-41
2. Chakraborty PS, Varanasi R, Majumdar AK, Banoth K, Prasad S, Ghosh MS, et al. Effect of homoeopathic LM potencies in acute attacks of haemorrhoidal disease: A multicentric randomized single-blind placebo-controlled trial. Indian J Res Homoeopathy 2013;7(2):72-80.
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4. Patel M, Pawaskar N, Mundra P, Tamboli P, and Kothare G. An approach to acute diarrhoeal disorders through sector and constitutional homœopathic treatment in tribal children attending Balwadis. Indian Journal of Research in Homœopathy 2010;4(4):36-48.
5. CCRH. Paediatric diarrhoea. Clinical Research Studies -Series III. New Delhi: CCRH; 2010: 36-40.
6. CCRH. Dysentery. Clinical Research Studies - Series III. New Delhi: CCRH; 2010: 10-6.
7. CCRH. Irritable Bowel Syndrome. Clinical Research Studies -Series III. New Delhi: CCRH; 2010: 17-23.

8. Nayak C, Singh V, Singh K, Singh H, Chakraborty P S, Kaushik S, et al. A prospective multicentre observational study to evaluate the role of homeopathic therapy with a group of predefined homœopathic medicines in the management of gastroenteritis. International Journal of BioResearch 2010; 1(2): 34-42.
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Gynaecology

Studies indicate potential of homœopathic intervention in a number of gynaecological disorders.

Table 9 Studies on gynaecological conditions

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Distress during climacteric years	Observational study	223	There was significant reduction (p=0.0001) in distress during climacteric years symptom scale developed by the CCRH with mean pre-treatment score being 14.1±4.7 and post treatment symptom score being 3.3±2.9. *Sepia*, *Lachesis*, *Calcarea carbonica*, *Lycopodium* and *Sulphur* were most frequently indicated and useful medicines.	B
2.	Menorrhagia	Observational study	193	Improvement was observed in reducing duration of flow and intensity of complaints. The study identified *Cinnamonum Q*, *Ficus religiosa Q*, *Erigeron Q*, *Geranium maculatum Q*, *Thlaspi bursa pastoris Q*	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				and *Trillium pendulum Q* as useful medicines.	
3.	Ovarian cyst	Observational study	48	Pre- and post-treatment ultrasonography reports showed statistically significant difference in mean values of maximum dimension of ovarian cyst ($p<0.05$). Cysts were totally resolved in 16.67% patients, 20.83% patients had reduction in the size of the cysts.	B
4.	Chronic Cervicitis and cervical erosion	Observational study	3213	*Sepia, Pulsatilla, Kreosotum, Caulophyllum* and *Lachesis* were found to be most indicated and useful medicines.	B
5.	Uterine fibroid	Case report	1	Two doses of *Lycopodium* 30C followed by two doses of *Lycopodium* 200C at different intervals helped in symptomatic relief and complete ablation of the fibroid without any surgical intervention.	C
6.	Uterine fibroid	Observational study	71	Out of 103 patients enrolled, follow up of 71 patients was completed as per protocol and their data was analyzed. In 12 patients, fibroids resolved completely. There was statistically significant reduction in some of the symptoms/signs as well as in size of fibroid(s) ($p= <0.05$). *Calcarea carbonica, Pulsatilla , Phosphorus , Lycopodium,*	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				Sulphur and *Kali carbonica* were found to be most useful among the prescribed homoeopathic medicines.	

1. Nayak C, Singh V, Singh K, Singh H, Gupta J, Lamba C D, et al. Management of Distress during Climacteric Years by Homœopathic Therapy. The Journal of Alternative and Complementary Medicine 2011; 17(11): 1037-42.
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3. Gupta G, Singh N, Singh R, Singh S, Nayak C, and Khurana A. Evidence based clinical study on the effect of homœopathic medicines in cases of ovarian cysts. Indian Journal of Research in Homœopathy 2011; 5 (1): 36-42.
4. CCRH. Clinical evaluation of the homœopathic medicines in chronic cervicitis and cervical erosion: A clinical study. Indian Journal of Research in Homœopathy 2007; 1(1): 24-8.
5. Iqbal J Q, Shahid A Md., Nikhat P S and Vatsalya B. A case of uterine fibroid. Indian Journal of Research in Homœopathy 2008; 2(2): 50-8.
6. Quadri I J, Ali Shahid MD, Vatsalya B, Ponnam H B, Parveen S Nikhat. Role of homoeopathic medicines in treating uterine fibroid: a prospective observational study; Indian Journal of Research in Homoeopathy 2012; 6 (1&2): 8-14.

Haematology

Homœopathic medicines, when used singly or as an adjuvant medicine to the established conventional treatment in various haematological conditions could enhance the effect of the conventional medicine but the evidences are meager.

Table 10 Studies on hematological conditions

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Sickle cell anaemia	Observational study	500	206 patients improved. *Bryonia alba* and *Rhus toxicodendron* were helpful in painful crisis attacks.	B
2.	Iron deficiency Anaemia	Observational study	223	*Sulphur, Kali carbonicum, Natrum muriaticum* and *Phosphorus* were helpful in improving hemoglobin in 77.4% of cases. Hemoglobin was raised by more than 3 mg/dL in 34.8% cases.	B
3.	Thalassemia	Controlled trial	38	There was a significant decrease in the serum ferritin and increase in fetal haemoglobin levels in subjects treated with homeopathic remedies in combination with Hydroxyurea. In 30 patients having an enlarged spleen, there was a reduction in size of spleen. There was an increase in the interval period of blood transfusion requirement (ranging between 25 and 75%) in the combined treatment group.	B
4.	Haemophilia	Single blind placebo controlled trial	28	Homeopathic medicines reduced frequency of bleeding, extent of bleeding, blood products consumed and pain scores ($P < 0.0001$) in comparison to placebo group.	B

1. Jha DK, Chowdhary JR, Sarkar DB, Bindra SK, Mondal BK, Rakshit G, et al. Sickle Cell Anaemia. Clinical Research Studies - Series I. New Delhi: CCRH; 2008: 105-12.
2. Vichitra AK, Puri A. Iron Deficiency Anemia. Clinical Research Studies - Series I. New Delhi: CCRH; 2008: 83-91.
3. Banerjee A, Chakrabarty BS, Karmakar SR, Chakrabarty A, Biswas S J, Haque S, et al. Can Homœopathy Bring Additional Benefits to Thalassemic Patients on Hydroxyurea Therapy? Encouraging Results of a Preliminary Study. Evidence-Based Complementary and Alternative Medicine 2010; 7 (1): 129-136.
4. Kundu T, Shaikh A, Kutty A, Nalvade A, Kulkarni S, Kulkarni R, et al. Homeopathic medicines substantially reduce the need for clotting factor concentrates in haemophilia patients: results of a blinded placebo controlled cross over trial. Homeopathy 2012; 101(1):38–43.

HIV/AIDS

Anti-retroviral drugs can significantly delay the progression from HIV infection to AIDS. Unfortunately, as in many resource-poor areas, access to this treatment is limited. Further, the treatment is not initiated until CD4 counts fall to 350 mm^3. Studies with homœopathic intervention were initiated as early as in 1990s. Although a number of studies responded in terms of clinical improvements, corroboration with CD4 counts and viral load is available in only a few studies. The medicines can be initiated at any stage of the disease and can be prescribed on the basis of symptom similarity, rather than waiting for the disease progression.

Table 11 Studies on HIV/AIDS

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	HIV/AIDS	Pilot study	63	After treatment varying from 3 to 16 months, all patients continued to remain symptom free during the follow-up. *Syphilinum, Tuberculinum, Arsenicum album, Cinchona officinalis, Hepar sulphuris, Mercurius solubilis, Rhus toxicodendron* were some of the useful medicines in these cases. In persistent generalised	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
2.	HIV/AIDS	Double-bling Placebo-controlled trial	80	lymphadenopathy strata, statistically significant difference was observed between verum and placebo groups (p=0.04) in CD4+ cell T lymphocyte counts, in the 6 months treatment period. *Phosphorus, Lycopodium, Pulsatilla, Nux vomica* were some of the useful medicines in this strata.	A
3.	HIV/AIDS	Observational study	870	Asymptomatic status was maintained in 534 patients for a period varying from 3-10 years out of 572 patients at baseline. Intercurrent illnesses such as oral candidiasis, diarrhoea, weakness, weight loss responded favourably to homœopathic medicines. *Calcarea carbonica, Arsenicum album, Bryonia alba, Rhus toxicodendron, Pulsatilla, Hepar sulphuris, Mercurius solubilis* and *Thuja* were some of the useful medicines.	B
4.	HIV/AIDS	Observational study	189	Homœopathic preparations of the known immune modifier *Azathioprine* along with *Azadirachta indica* was found to be useful in 156 out of 189 patients and alleviated infections such as fever, cough, diarrhoea, oral candidiasis, oral ulcers, herpes zoster, generalized pruritic dermatitis. Statistically significant changes were	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
5.	HIV/AIDS	Observational study	72	seen in viral load as compared to the baseline data (95% CI, 0.16, 1.24, p=0.012), Body Mass Index (95% CI,-1.12, -0.57, p<0.001), physical health, psychological and environmental domains of WHO-Quality of Life - Bref, p < 0.05).	B

1. Rastogi DP, Singh VP, Singh V and Dey SK. Evaluation of homœopathic therapy in 129 asymptomatic HIV carriers. British Homœopathic Journal 1993; 82(1): 4–8.
2. Rastogi DP, Singh VP, Singh V, Dey SK and Rao K. Homeopathy in HIV infection: a trial report of Double Blind Placebo Controlled study. British Homœopathic Journal 1999; 88(2): 49-57.
3. Mishra N, Singh V, Dey SK, Bhanumurty K, Muraleedharan KC, Raveendar Ch., et al . Homœopathic medicines in the management of HIV infection an observational study. Indian Journal of Research in Homœopathy 2008; 2 (2): 31-46.
4. Singh VP, Paul V, Gupta J, Oberai P and Roja V. Evaluation of predefined homœopathic preparations of immune modifiers along with other indicated homœopathic medicines in the management of HIV infection. Clinical Research Studies - Series II. New Delhi: CCRH; 2009: 51-61.
5. Muraleedharan KC, Dey SK, Popula P, Siddiqui VA, Dixit R, Singh V et al. Effectiveness of homœopathic medicines in HIV patients - a clinical trial. Indian Journal of Research in Homœopathy 2010; 4(4): 29-35.

Malignant Diseases

The treatment modalities for malignancy are very limited and therefore, all medical streams have attempted to find plausible therapeutic options for their control and treatment. The research studies suggest positive leads in delaying the progress of disease and improving well being. However, these studies are preliminary and further studies are needed to generate higher evidence levels.

Table 12 Studies on Malignant diseases

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Advanced gallbladder, periampullary, and liver carcinomas	Case reports	3	Three cases of various pathologically confirmed malignancies (one gallbladder, one periampullary, and one liver) where studies. These patients underwent Psorinum therapy as the primary cancer treatment. In these patients, Psorinum-6x was administered orally at a dose of 0.02?mL/kg body weight/day on an empty stomach for a complete course duration of 2 years, along with allopathic and homeopathic supportive treatment. According to the Response Evaluation Criteria in Solid Tumors criteria, complete tumor response occurred in 1 case and partial tumor response occurred in the other 2 cases. All 3 patients remained alive and maintained a stable quality of life for at least 2 years. The patients reported no adverse side-effects from Psorinum-6x.	C
2.	Radiation reaction (post radiotherapy)	Randomized placebo-controlled trial	82	Homœopathic medicines *Cobaltum* and *Causticum* provided a significant reduction in the degree of radiation reactions when compared to placebo	A
3.	Glioma	Observational study	15	15 glioma patients treated with R*uta* and *Calcarea phosphorica* 6 of the 7 glioma patients showed complete regression of tumors.	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
4.	Malignancy	Observational study	227	Patients on Iscador, an anthroposophical drug, used along with Homœopathy or individually, showed improvement in terms of pain, fever, anorexia, insomnia, vomiting, dysphagia along with reduction in primary tumor growth.	B
5.	Malignancy	Case reports	3	Homœopathic medicines *Lycopodium*, *Calcarea carbonica* and *Ferrum phosphoricum* prescribed to three different patients on constitutional basis may play a useful role in supportive and palliative after standard care.	C
6.	Malignancy	Observational study	158	*Psorinum* 6X was administered orally to 158 patients up to 0.02 ml/Kg body weight as a single dose on empty stomach per day for 2 years along with allopathic and homeopathic supportive cares. Complete tumor response occurred in 28 (17.72%) cases and partial tumor response occurred in 56 (35.44%) cases.	B

1. Chatterjee A, Biswas J. A homeopathic approach to treat patients with advanced gallbladder, periampullary, and liver carcinomas: a report of 3 cases.J Altern Complement Med. 2012 Feb;18(2):180-6. doi: 10.1089/acm.2010.0027.
2. Kulkarni A, Nagarkar BM, and Burde GS. Radiation protection by use of homœopathic medicines. Hahnemann Homœopath Sandesh 1988; 12(1): 20-3.
3. Pathak S, Multani AS, Banerji P, and Banerji P. Ruta 6 selectively induces cell death in brain cancer cells but proliferation in normal peripheral blood lymphocytes: A novel treatment for human brain cancer. Int J Oncol. 2003; 23(4): 975-82.

4. CCRH. Clinical evaluation of homœopathic medicines along with Iscador therapy in managing malignant diseases. Clinical Research Studies -Series III. New Delhi: CCRH; 2010: 24-35.
5. Rajendran ES. Homeopathy as a supportive therapy in cancer. Homeopathy 2004; 93(2): 99-102.
6. Chatterjee A, Biswas J, Chatterjee A, Sudin B, Mukhopadhyay B and Mandal S. Psorinum Therapy in Treating Stomach, Gall Bladder, pancreatic, and Liver Cancers: A Prospective Clinical Study. Evidence-Based Complementary and Alternative Medicine 2011; doi:10.1155/2011/724743

Mental Disorders

Various overt and covert psychiatric conditions have been managed effectively with individualized homœopathic approach. However, studies are in progress for more evidence in treatment of psychiatric disorders through Homœopathy.

Table 13 Studies on psychiatric and psychological conditions

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Attention deficit hyperactive disorder	Randomized placebo controlled pilot trial	54	A total of 54 patients (homoeopathy = 27, placebo = 27) were analysed under modified intention to treat (ITT). All patients in homoeopathy group showed better outcome in baseline adjusted General Linear Model (GLM) repeated measures ANCOVA for oppositional, cognition problems, hyperactivity and ADHD Index (domains of CPRS-R (S)) and CGI-IS at T3, T6, T9 and T12 (P = 0.0001). The mean baseline-adjusted treatment difference between groups at month 12 from baseline for all individual outcome measures favoured homoeopathy group (p=0.0001).Frequently used medicines were *Calcarea carb., Lycopodium, Phosphorus* .	A

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
2.	Learning disabilities	Randomised double blind case control study	67	The children under homoeopathic treatment with remedial education showed an early response to remedial inputs and a statistically significant change in the indicators of dyslexia and dysgraphia. There was also a significant change in the co-morbid behavioural condition notably Attention Deficit Hyperactivity Disorder (ADHD). The study not only helped verify the characteristic symptoms of the remedies from Materia Medica useful in LD but also was able to report clinical symptoms which have not been reported in source books. 53.12% of children needed Calcarea salts. The other significant remedy indicated in 9.3% children was *Medorrhinum*, *Argenticum nitricum*, *Calc-flour* and *Natrum salts* were indicated in 6.25% children.	A
3.	Depressive episode	Observational study	83	Eighty-three patients, who fulfilled the inclusion and exclusion criteria were enrolled in the study. Out of these, 67 patients completed the follow-up, 16 patients did not attend the Outpatient Department (OPD) for varying periods. The ITT principle was applied for the analysis considering their last observations. A statistically significant ($P = 0.0001$, $P < 0.05$) difference in the mean scores of	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				HDRS, using the paired t-test, was observed. The mean scores at baseline and at end were 17.98 ± 4.9 and 5.8 ± 5.9, respectively. Statistically significant differences were also observed in the BDI and CGI scales. The most frequently used medicines were: *Natrum muriaticum, Arsenicum album, Pulsatilla nigricans, Lycopodium clavatum* and *Phosphorus.*	
4.	Acute Alcohol withdrawal	Observational study	112	Individualised Homoeopathy was given to 112 patients reporting with AAW. The clinical assessment was done for 05 days using Clinical Institute Withdrawal Assessment Scale of Alcohol-Revised (CIWA-Ar). Post-withdrawal phase, quality of life of patients was assessed at end of 01st , 03 rd and 06 th month using World Health Organisation quality of life (WHOQOL)- BREF. There was a significant decrease in CIWA-Ar mean scores and increase in quality of life score (P < 0.001). The most common remedies used were *Arsenicum album, Lycopodium clavatum, Belladonna, Nux vomica* and *Pulsatilla.*	B
5.	Withdrawal symptoms of substance abuse	Observational study	241	Homœopathic medicines *Rhus toxicodendron, Avena sativa, Nux vomica, Arsenicum album, Chamomilla*	A

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				were found to be most useful in alleviating the withdrawal symptoms.	
6.	Behavioural disorders	Double blind randomized controlled trial	169	Statistically significant improvement was observed in opiate withdrawal symptoms ($p<0.05$). The medicines used in the study were *Arsenicum album, Nux vomica, Rhus toxicodendron* and *Pulsatilla.*	A
7.	Behavioural disorders	Observational study	3424	2787 patients suffering from 13 different types of behavioural disorders improved after homœopathic intervention. *Arsenicum album, Calcarea carbonica, Hyoscyamus, Ignatia, Lachesis, Natrum muriaticum, Nux vomica, Phosphorus, Pulsatilla, Stramonium, Sulphur* and *Tuberculinum* were found to be most useful.	B
8.	Behavioural problems of mentally challenged children	Observational study	835	Complaints such as destructiveness, aggressiveness, self-injury, rebelliousness improved in mentally retarded children. *Baryta carbonica, Baryta muriatica, Belladonna, Cuprum metallicum, Chamomilla, Cina, Stramonium, Sulphur, Tuberculinum* and *Tarentula hispanica* were some of the useful medicines identified.	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
9	Autism	Observational study	25	After a treatment period of 18 months, 60% children on classical homœopathic approach showed improvement in autistic symptoms whereas 38% showed improvement with non-classical method of homœopathic prescription.	B
10.	Autism	Observational study	60	The study demonstrated significant improvement of autistic features with mean change in ATEC score (ATEC 1 - pre-treatment with ATEC 5 -post-treatment) was 15.12 and ATEC mean percent change was 19.03. Statistically significant changes in ATEC scores were observed in all the quarters analyzed, P = 0.0001. Significant improvement was observed in behavior by Autistic Hyperactivity Scale, AHS 1 36 to AHS 5 14.30 with F-value 210.599 (P = 0.0001). Total 88.34% cases showed improvement, 8.33% showed status quo, and 3.33% cases worsened. Nine out of 60 cases showed a reversal of CARS putting them into non-autistic zone, P = 0.0001. A sharp decrease (34%) in ATEC scores, in the first quarter implied positive effect of homoeopathic medicines, prescribed, as per the homoeopathic principles.	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
11	Acute mania	Observational study	80	*Belladonna*, *Ignatia* and *Phosphorus* were found to be most useful medicines.	B

1. Oberai P, Gopinadhan S, Varanasi R, Mishra A, Singh V, Nayak C. Homoeopathic management of attention deficit hyperactivity disorder: A randomised placebo controlled pilot trial. Indian J Res Homoeopathy 2013;7(4):158-67.
2. Dhawale KM, Tamboli MP , Katawala MY , Tambitkar NN , Tamboli PP . Use of homoeopathic remedies in the management of learning disabilities Indian Journal of Research in Homœopathy 2014;8(2): 87-94
3. Oberai P, Balachandran I, Nair KR J, Sharma A , Singh VP , Singh V , Nayak C.Homoeopathic management in depressive episodes: A prospective, unicentric, non-comparative, open-label observational study. Indian Journal of Research in Homœopathy 2013;7(3): 116-125
4. Nayak D, Arora S, Singh U, Borah N, Thakur J N, Khurana A, et. al. Managing acute alcohol withdrawal with Homoeopathy: A prospective, observational, multicentre exploratory study. Indian Journal of Research in Homœopathy 2014;8(4):224-230
5. Rai Y. Withdrawal Symptoms of Drug Abuse. Clinical Research Studies - Series I. New Delhi CCRH 2008: 125-9.
6. Grover AK, Goel R and Bhushan B. Double blind placebo-controlled trial of homœopathic medicines in management of withdrawals symptoms in opium addicts and its alkaloid derivatives-dependents. Indian Journal of Research in Homœopathy 2009;3(1): 41-4.
7. Nair KRJ, Gopinadhan S, Pramanik MS, Shaw R, Balachandran VA, Kurup TNS, et al. Behavioural Disorders, Clinical Research Studies - Series 1.New Delhi: CCRH; 2008: 1-14
8. Indira B, Balachandran VA, Pramanik MS, Shaw R, Kurup TNS, Thomas EC, et al. Behavioural Problems of Mentally Challenged Children. Clinical Research Studies - Series I. New Delhi CCRH 2008: 15-26.
9. Gupta N, Saxena RK, Malhotra AK and Juneja R. Homœopathic medicinal treatment of Autism. Indian Journal of Research in Homœopathy 2010; 4 (4) : 19-28.
10. Barvalia P M, Oza P M,Daftary A H, Patil V S, Agarwal V S, Mehta A R, Effectiveness of homoeopathic therapeutics in the management of childhood autism disorder ; Indian Journal of Research in Homoeopathy 2014: 8 (3): 147-159
11. Gopinadhan S, Kurup TNS and Shaw R. Effect of similimum in acute mania. CCRH Quarterly Bulletin 2004; 26(4):19-26.

Neurology

Neurological disorders are a challenging area for research in Homœopathy, as the therapeutic options are limited in this field. However, the steps undertaken in this field are only in nascent stage and well designed clinical trials are needed.

Table 14 Studies on neurological conditions

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Epilepsy	Observational study	546	The medicines which were commonly indicated and also found useful were *Agaricus muscarius, Belladonna, Cicuta virosa, Cina, Cuprum metallicum, Gelsemium* and *Natrum muriaticum.*	B
2.	Migraine	Observational study	25	21 cases were relieved out of 25 cases prescribed. Seven medicines were most indicated. These are *Natrum muriaticum, Nux vomica, Pulsatilla, Sulphur, Calcarea carbonica, Ignatia, Belladonna.*	B

1. Gopinadhan S, Murty GSN, Parmanik MS, Shaw R, Balachandran VA, Kurup TNS, et al. Epilepsy. Clinical Research Studies - Series I. New Delhi: CCRH; 2008: 41-52.
2. Gopinadhan S. Role of Homœopathy in migraine in adolescence. CCRH Quarterly Bulletin 2006; 28 (1): 31-6.

Urological Disorders

Studies so far indicate that individualized homœopathic treatment can increase the frequency of expulsion of stones spontaneously avoiding the use of surgical measures in good percentage of cases. In benign hyperplasia of prostate, bladder outflow obstruction is a distressing presentation in men affecting quality of life. The studies have focused on treatment modalities to relieve the symptoms of bladder outflow obstruction, thereby avoiding surgical intervention.

Table 15 Studies on urological disorders

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Prostatomegaly	Case reports	1	This case of gallstone with prostatomegaly treated with homoeopathic medicines, reported here is such an example. After going through detailed case-taking and repertorization, initially *Sulphur* and later on *Medorrhinum* was prescribed based on symptom totality. The case has been cured in respect of both symptomatologically and pathologically as evident by follow up investigations.	C
2.	Urinary tract infections in patients with neurogenic bladder dysfunction	Case series	8	Eight patients were followed up for a median period of 15 months. Five patients remained free of UTI, whereas UTI frequency was reduced in three patients.	C
3.	Urethral calculi	Case report	1	A case of a 33-year-old male who presented at Delhi Govt Homoeopathic Dispensary at Aali Village with intense pain and scanty urination. Ultrasonography confirmed the diagnosis of urethral calculus in prostatic part of urethra. On the basis of keynotes, *Lyssin* prescribed in LM potencies improved urinary flow immediately and provided pain relief, which were objectively assessed as per pre-defined scales, and the 11 mm calculus was expelled in 8 days. No	C

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				complication was observed during the following 6 months with after expulsion of a large calculus.	
4.	Acute paraphimosis with balanitis	Case report	1	This case shows the usefulness of homoeopathic medicines, *Apis mellifica, Rhus toxicodendron, Cinnabaris* and *Mercurius solubilis*, in not only giving symptomatic relief to the patient but also restoring the foreskin completely to its normal position.	C
5.	Benign Prostatic Hyperplasia	Case series	11	Seven cases were relieved of their urinary symptoms with *Pulsatilla* and four cases with *Thuja*. In all the cases, reduction in American Urological Association Symptom Index (AUASI) was found.	C
6.	Benign Prostatic Hyperplasia	Observational study	43	There was significant difference in mean values (pre- and post-treatment) in AUASI, prostate weight, prostate specific antigen levels and average flow rates. *Lycopodium, Pulsatilla, Sulphur* and *Calcarea carbonica* were most frequently indicated and found useful.	B
7.	Benign Prostatic Hyperplasia	Observational study	180	180 patients were sequentially allocated to Organopathic medicines(OM), Constitutional medicines (CM) or combination of	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				constitutional along with organopathic medicines(BCOM) (60 per group). Overall 85% of patients showed improvement of subjective symptoms such as frequency, urgency, hesitancy, intermittent flow, unsatisfactory urination, feeble stream, diminution of residual urine volume but there was no reduction in prostate size. Treatment response was highest with BCOM group (38.24%) compared to OM (31.62%) and CM (30.15%).	
8.	Benign Prostatic Hyperplasia	Observational study	187	The data of 187 patients out of 231 enrolled was analyzed. The non-parametric Friedman test was applied to test for significant difference in AUASI score reported over 12 months (baseline, 3 months, 6 months and 12 months). There was a statistically significant reduction in AUASI score (median change of 13 points, p= 0.0001) on completion of one year of treatment. A total of 10 out of 20 pre-defined medicines were prescribed to 187 patients. The medicines found to be most useful in this study are: *Thuja* (27 out of 53; 51%), *Sulphur* (26 out 46; 56.5%), *Pulsatilla* (34 out of 46; 74%), *Lycopodium*. (7 out of 13; 54%).There was a mean reduction of 2.3 ml in prostate volume, which was significant satistically (p=0.005).	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
9.	Benign Prostatic Hyperplasia	Case report	1	In this case of BPH, subjective measures such as changes in International Prostatic Symptom Score / American Urological Association Assessment (IPSS/AUA), and objective measures such as changes in prostate size and urinary flow rate were assessed, as the successful management and treatment of BPH should seek both to improve symptoms and prevent disease progression. The case was treated with *Lycopodium*, a homoeopathic medicine.	C
10.	Urolithiasis	Observational study	220	The Urolithiasis symptom score developed by the Council, at baseline: median 11 (10-13) and after treatment: median 5 (0-8), was analysed and found statistically significant (P<0.005). Expulsion of calculi was seen in 106 cases (single calculus in 76 cases, multiple calculi in 30 cases). *Lycopodium, Sulphur, Pulsatilla, Nux vomica* and *Cantharis* were found to be most useful medicines.	B

1. Ghosh MS, Shil RC, Chakma A.A case of gallstone with prostatomegaly. Indian journal of Research in Homoeopathy 2014; 8 (4): 231-235
2. Pannek J , Rademacher SP, Jus M C , Jus MS. Usefulness of classical homoeopathy for the prevention of urinary tract infections in patients with neurogenic bladder dysfunction: A case series. Indian Journal of Research in Homoeopathy 2014;8(1):31-6

3. Sharma S , Wadhwani GG. Experience with homoeopathy in a case of large urethral calculus. Indian Journal of Research in Homoeopathy 2013; 7 (4): 176-180
4. Chinta R, Banoth K . Evidence-based homoeopathy: A case of acute paraphimosis with balanitis. Indian Journal of Research in Homoeopathy 2013; 7 (3): 133-6
5. Reddy GRC, Oberai P, Singh V, and Nayak C. Treating Benign Prostatic Hyperplasia in Elderly Men. Indian Journal of Research in Homœopathy 2009; 3(4): 37-43.
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7. Hati AK, Paital B, Naik KN, Mishra AK, Chainy GBN and LK Nanda. Constitutional, organopathic and combined homeopathic treatment of benign prostatic hypertrophy: a clinical trial. Homeopathy 2012; 101(4): 217-23.
8. Oberai P , Varanasi R, Ramesh D , Arya DD , Reddy G RC , Sharma SK , Nayak C , Singh V , Singh H. Homoeopathic medicines in the management of benign prostatic hyperplasia: A multicentric prospective observational study . Indian Journal of Research in Homoeopathy 2012; 6 (3): 16-25
9. Gupta G, Singh S. An evidence based case study of benign prostatic hyperplasia. Indian Journal of Research in Homoeopathy 2012; 6 (3): 26-30
10. Siddiqui VA, Singh H, Gupta J, Nayak C, Singh V. Sinha MN, et al. A Multicentre observational study to ascertain the Role of Homœopathic Therapy in Urolithiasis. Indian Journal of Research in Homœopathy 2011; 5(2): 29-39.

Respiratory Allergies and Infections

There is increasing evidence to justify the use of homœopathic medicines in treatment of respiratory tract infections including rhinitis, sinusitis, tonsillitis, acute otitis media and chronic obstructive pulmonary disease. The use of Homœopathy as a first line of treatment in these conditions can markedly reduce the duration and intensity of illness especially in paediatric population. Further, randomized controlled trials comparing the treatment responses, cost effectiveness on various respiratory tract infections can be undertaken in future.

Table 16 Studies on respiratory condition

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Acute respiratory infections	Observational study	296	Improvement was seen in 281 cases and *Arsenicum album* was found to be most useful remedy.	B
2.	Tonsillitis	Observational study	1030	The most common useful medicines are *Belladonna, Mercurius solubilis, Baryta carbonica, Kali carbonicum, Phytolacca* and *Mercurius-iodatus ruber.*	B
3.	Bronchial asthma	Observational study	2107	Homœopathic medicines have a role in managing acute attacks of Bronchial asthma and in controlling recurrent attacks. *Hepar sulphuris, Kali carbonica, Lycopodium, Natrum sulphuricum, Phosphorus* and *Pulsatilla* were found to be most useful medicines.	B
4.	Acute rhinitis	Observational study	638	The pre- and post- score assessment as per acute rhinitis symptom score developed by CCRH showed statistically significant improvement ($p<0.05$). *Nux vomica, Mercurius solubilis, Belladonna* were the most useful among the pre-defined trial medicines.	B
5.	Acute Tracheobronc-hitis	Observational study	182	Acute Tracheobronchitis symptom score developed by the CCRH showed statistically significant reduction within 24 hours of starting the treatment ($p = 0.0001$). *Phosphorus,*	B

Table 16 Studies on respiratory condition

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				Arsenicum album, *Bryonia alba* and *Pulsatilla* were most indicated among the predefined medicines.	
6.	Sinusitis	Observational study	394	*Belladonna*, *Kali bichromicum*, *Nux vomica*, *Rhus toxicodendron* and *Silicea* were found to be useful medicines in comparison to other medicines in alleviating the symptoms of sinusitis.	B
7.	Chronic sinusitis	Observational study	550	Statistically significant reduction after treatment (p=0.0001) was found in chronic sinusitis assessment score developed by CCRH. *Silicea*, *Lycopodium*, *Phosphorus* and *Kali iodata* were found to be most useful medicines among pre-defined trial medicines.	B
8.	Acute otitis media	Randomized controlled trial	81	Individualized Homœopathy is as effective as conventional treatment (analgesics, antipyretics and anti-inflammatory drugs) in acute otitis media. Symptomatic improvement was quicker in the Homœopathy group. Antibiotics were not required for patients in Homœopathy group whereas 97.5% patients in conventional group required an antibiotic.	A

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
9.	Simple and mucopurulent chronic bronchitis	Observational study	56	Improvement was observed in symptom score developed by the CCRH. *Pulsatilla, Phosphorus, Lycopodium, Arsenicum album* and *Silicea* were found to be useful medicines.	B
10.	Upper respiratory tract infections (URTI)	Controlled clinical trial	891	The homœopathic medicines were found to be as effective as conventional group in bringing down temperature within 2-3 days in complaints of URTI.	B

1. CCRH. Acute Respiratory Infections. Clinical Research Studies - Series III. New Delhi: CCRH; 2010: 1-8.
2. CCRH. Tonsillitis. Clinical Research Studies- Series III. New Delhi: CCRH; 2010: 54-62.
3. Vichitra AK, Sharma SR, Sharma B, Raju K, Indira B, Thomas EC, et al. Bronchial Asthma. Clinical Research Studies - Series I. New Delhi: CCRH; 2008: 27-40.
4. Nayak C, Singh V, Singh K, Singh H, Oberai P, Roja V, et al. A multi-centric open clinical trial to evaluate the usefulness of 13 predefined homeopathic medicines in the management of acute rhinitis in children. Int J High Dilution Res 2010; 9(30):30-42.
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7. Nayak C, Singh V, Singh VP, Oberai P, Roja V, Shitanshu SS, et al. Homeopathy in Chronic Sinusitis: A Prospective Multi-centric Observational Study. Homeopathy 2012; 101(2): 84–91.
8. Sinha MN, Siddiqui VA, Nayak C, Singh V, Dixit R, Dewan D, et al. Randomized controlled pilot study to compare Homœopathy and conventional therapy in acute otitis media. Homeopathy 2012; 101(1): 5–12.

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10. CCRH. Controlled clinical trial of homœopathic medicines in the management of upper respiratory tract infections. CCRH Quarterly Bulletin 2006; 28(4):14-5.

Rheumatology

Homœopathic treatment offers an effective alternative in management of pain, stiffness, swelling in joint disorders. Preliminary evidence suggesting reduction of inflammatory markers shows a possible role of Homœopathy in delaying progress of the disease as observed in rheumatoid arthritis. Further, well designed studies including biochemical and inflammatory markers can open new avenues to identify the possible role of homœopathic medicines in these and other unexplored conditions.

Table 17 Studies on Rheumatological conditions

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Osteoarthritis	Observational study	1049	*Bryonia, Calcarea carbonica, Lycopodium* and *Rhus toxicodendron* were found to be useful medicines in relieving the pain and stiffness due to osteoarthritis.	B
2.	Osteoarthritis	Observational study	508	*Bryonia, Calcarea carbonica, Calcarea fluorica, Causticum, Formica rufa* were frequently indicated among the predefined medicines and improved pain, joint tenderness, limitation of movement and stiffness.	B
3.	Osteoarthritis	Randomized Double-Blind Placebo-Controlled Feasibility Study	60	Statistically significant reduction was achieved in 3 visual analog scales (measuring pain, stiffness, and loss of function) and Osteoarthritis Research Society International scores in both groups over 2 weeks (P < .05);	A

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				however, group differences were not significant (P > .05). Overall, homeopathy did not appear to be superior to placebo; still, further rigorous evaluation in this design involving a larger sample size seems feasible in future.	
4.	Rheumatoid arthritis	Observational study	309	Improvement in joint swelling, pain, tenderness and morning stiffness was observed. *Rhus toxicodendron, Bryonia alba, Calcarea carbonica, Medorrhinum* and *Sulphur* were most useful medicines.	B
5.	Rheumatoid arthritis	Controlled pilot trial	45	Patients receiving *Rhus toxicodendron* had significant improvement in visual analogue scale for global assessment of disease after 3 weeks of therapy as compared to placebo. There was significant decrease in IL6 levels in patients treated with *Rhus toxicodendron* and *Medorrhinum* as compared to the placebo group.	B
6.	Rheumatoid arthritis	Observational study	10	Homoeopathic constitutional medicines were found to reduce the intensity of pain in patients with RA (t = 4.3733, P < 0.01) along with reduction in consumption of NSAIDs (t = 2.4, P < 0.05). The DAS reduced in all 10 patients (t = 2.67, P < 0.01). The QoL was also found to improve under	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				homoeopathic medication (t = 4.044, P < 0.01) and no further deterioration joint/disability was observed in any of the 10 patients. Mean ESR improved to 19.5 from 38.1 (t = 2.235, P < 0.05). Out of 10, 3 (30%) patients were found to be sero-negative after homoeopathic constitutional similimum.	
7.	Cervical Spondylosis	Observational study	81	Bowel nosodes when used on the basis of the stool culture of patients suffering from cervical spondylosis showed improvement in neck pain, tingling sensation and stiffness.	B
8.	Cervical Spondylosis	Prospective randomized clinical pilot study	56	AUC for pain was significantly less in the LM group [Median (IQR): 112 (86 to 299); p= 0.007] after the prescription of homeopathic medicines. Overall quality of life of the patients after homeopathic medication showed significant improvement in the WHO-BREF domains: Physical, psychological, and Environmental only. most frequently usedhomeopathic medicines in both the groups are: *Lyc.Sulph., Bry. Phos.,Calc. , Nux- v., Rhus- t.,Nat-m.*	A
9.	Reiter's disease	Case report	1	*Nux vomica* in very high potencies (50M, CM) helped in relieving fever, joint pains and crusted eruptions.	C

1. Gopinadhan S, Kurup TNS, Sumitran P, Vasanthiamma T, Sivadas PS, Nair KRJ, et al. Osteoarthritis. Clinical Research Studies -Series I. New Delhi: CCRH; 2008: 93-103.
2. Bhanumurty K., Raveendar Ch., Sahagal G C, Singh B, Singh K, Vichitra A K, et al. Clinical evaluation of predefined homœopathic medicines in the management of Osteoarthritis. Clinical Research Studies - Series II. New Delhi: CCRH; 2009: 77-84.
3. Koley M, Saha S, Ghosh S .A Double-Blind Randomized Placebo-Controlled Feasibility Study Evaluating Individualized Homeopathy in Managing Pain of Knee Osteoarthritis.Evid Based Complementary Altern Med. 2015 Jan 30.
4. CCRH. Rheumatoid Arthritis. Clinical Research Studies - Series III. New Delhi:CCRH; 2010: 47-53.
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6. Kundu TK , Shaikh A F , Jacob SM .To evaluate the role of homoeopathic medicines as add-on therapy in patients with rheumatoid arthritis on NSAIDs: A retrospective study. Indian Journal of Research in homoeopathy 2014; 8 (1): 24-30
7. Nayak C. Study on effectiveness of homœopathic bowel nosodes in the treatment of cervical spondylosis on the basis of stool culture report. Indian Journal of Research in Homœopathy 2008; 2 (1): 42-8.
8. Nayak C., Singh V, Gupta J, Ali Mohd. S, Pal R, Arya MD, et al. Homoeopathic individualized LM-potencies versus Centesimal potencies for pain management of cervical spondylosis: A multicenter prospective randomized exploratory clinical study. Indian Journal of Research in Homoeopathy 2012; 6(4): 16-23.
9. Gupta R, Manchanda RK. Reiter's disease treated with Nux vomica. Homeopathy 2006; 95(2): 103-4.

Tuberculosis

Tuberculosis (TB) is a major public health problem in India and accounts for one-fifth of the global TB incident cases. Each year nearly 2 million people develop TB, of which around 0.87 million are infectious cases and annually around 330,000 Indians die annually due to TB [51]. Since 1993, the Government of India has implemented the WHO-recommended DOTS strategy via the Revised National Tuberculosis Control Programme (RNTCP). Few studies have suggested that homœopathic medicines can be beneficial in refractory, partly treated cases and as an add on therapy to established Anti tubercular treatment.

[51]Tuberculosis [Internet].New Delhi(IN). © 2012 World Health Organization [updated 2012 July 17; cited 2012 Sept 8]. Available from: http://www.whoindia.org/en/section3/section123.htm

Table 18 Studies on tuberculosis

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1.	Multidrug resistant tuberculosis	Randomized, double blind, placebo controlled study	120	ITT analyses revealed sputum culture conversion from positive to negative in 23 (38.3%) in SR + H; 23 (38.3%) patients in SR + P group; (p = 0.269) and 27 (55.1); 21 (42.8%), p = 0.225. The mean weight gain in SR + H group was 2.4 ± 4.9 and in SR + P was 0.8 ± 4.4; [p = 0.071], reduction in ESR in SR + H was -8.7 ± 13.2; SR + P was 3.9 ± 15.4 [p = 0.06]. The mean increase in hemoglobin was by 0.6 ± 1.7 in SR + H & 0.3 ± 2.3 [p = 0.44] in SR + P group at 95% confidence interval. Statistically significant improvement was seen in CXR in 37 (61.7%) in SR + H and 20 (33.3%) patients in SR + P group (p = 0.002). Add on homeopathy in addition to standard therapy appears to improve outcome in MDR-TB.	A
2.	Tubercular lymphadenitis	Retrospective exploratory study	25	The study identified the homœopathic regime consisting of patient specific constitutional medicines, *Tuberculinum* (200 or 1M) as intercurrent medicine and *Silicea* 6X as supportive medicine.	C
3.	Pulmonary tuberculosis	Case reports	2	In both the cases, there was a clear radiological and microbiological evidence of improvement coinciding with homœopathic treatment.	C

1. Chand KS, Manchanda RK, Mittal R, Batra S, Banavaliker JN, De I. Homeopathic treatment in addition to standard care in multi drug resistant pulmonary tuberculosis: a randomized, double blind, placebo controlled clinical trial.Homeopathy. 2014 Apr;103(2):97-107. doi: 10.1016/j.homp.2013.12.003.
2. Chand KS, Manchanda RK, Batra S, and Mittal R. Homœopathy in the treatment of tubercular lymphadenitis (TBLN) – An Indian Experience. Homeopathy 2011; 100 (1):157-67.
3. Goyal K K. Two cases of pulmonary TB treated with homeopathy. Homeopathy 2002; 91(1): 43-6.

Chikungunya

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1	Chikungunya	Randomized double blind placebo controlled trial	38247	The findings showed that 2525 out of 19750 persons of *Bryonia alba* 30 C group suffered from chikungunya, compared to 2919 out of 18479 in placebo group. Cluster analysis showed significant difference between the two groups [rate ratio = 0.76 (95% CI 0.14 - 5.57), P value = 0.03]. The result reflects a 19.76% relative risk reduction by *Bryonia alba* 30C as compared to placebo.	A
2.	Chikungunya Fever and Post-Chikungunya Chronic Arthritis	Observational study	126	A single homeopathic medicine was prescribed for each patient after case taking with the help of Materia Medica and/or Repertory. Complete recovery was seen in 84.5% Chikungunya Fever (CF) cases in a mean time of 6.8 days. 90% cases of Post-Chikungunya Chronic Arthritis (PCCA) recovered completely in a mean time of 32.5 days. Homeopathic therapy may be effective in CF and PCCA.	B

1. Nair J K R, Gopinadhan S, Kurup ST N, Kumar B S J R, Aggarwal A, Varanasi R, et. al. Homoeopathic Genus Epidemicus 'Bryonia alba' as a prophylactic during an outbreak of Chikungunya in India: A cluster -randomised, double -blind, placebo- controlled trial. Indian Journal of Research in Homoeopathy 2014; 8(3):: 160-165
2. Wadhwani GG.Homeopathic drug therapy. Homeopathy in Chikungunya Fever and Post-Chikungunya Chronic Arthritis: an observational study.Homeopathy. 2013 Jul;102(3):193-8.

Influenza

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1	Influenza like illness	Randomized placebo controlled trial	447	In this study, 447 cases were enrolled in three groups: LM group (n=152), C group (n=147) and Placebo (n=148) cases. There was a significant difference in temperature from 2nd day onwards in LM and Centesimal groups. The significant improvement was observed in headache, myalgia, sore throat, fatigue, nasal complaints, sweat and Cough. The study revealed significant effect of individualized homoeopathic treatment in the patients suffering from ILI . The medicines which were commonly prescribed were: *Ars. Alb., Bry. alb, Rhus tox , Bell., Nux vom., Sepia, Phos., Gels., Sulph., Nat. mur.* and *Acon.*	A
2.	Influenza like illness	Data collection survey	1126	23 homeopathic physicians contributed to data collection. At the first appointment, 1126 patients had valid SF symptoms. A total of 89 different combinations of SF	B

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				symptoms was observed, the most common being temperature 38°C + cough + runny nose (n = 170; 15.1%). A total of 44 different remedies (or combinations of remedies) were used at these first appointments, the most frequently prescribed being *Arsenicum album* (n = 265; 23.5%). For a total of 99 FU appointments with valid SF symptoms, *Arsenicum album* was prescribed most frequently overall (n = 28; 28.0%).	

1. Chakraborty PS, Lamba CD, Nayak D, John MD, Sarkar DB, Poddar A, et al. Effect of individualized homoeopathic treatment in influenza like illness: A multicenter, single blind, randomized, placebo controlled study. Indian J Res Homoeopathy 2013;7:22-30.
2. Mathie RT, Baitson ES, Frye J, Nayak C, Manchanda RK, Fisher P. Homeopathy. Homeopathic treatment of patients with influenza-like illness during the 2009 A/H1N1 influenza pandemic in India.Homeopathy 2013 Jul;102(3):187-92.

Others

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
1	Border line leprosy	Case report	1	A Borderline Lepromatous (BL) leprosy case was treated with *Mercurius solubilis*, a homoeopathic medicine for two years. The patient showed appreciable improvement in clinical signs and symptoms. Lesions on the skin almost disappeared; no swelling of hand and feet was noted along with disappearance of	C

Sl. No	Disease condition	Study design	Sample size studied	Outcome	Evidence grade
				infiltration on eye brows. Nodular lesions on both the ear lobes diminished remarkably. Regain of sensation to touch, pain and pressure were noted and their test responses were normal. Slit skin smears were negative from all sites with 0 Bacteriological Index [BI] which was positive for acid fast bacilli [AFB] with an average of 4+ BI before treatment. Histologic study revealed absence of granuloma in dermis except the presence of occasional clusters of lymphocytes. Lepromin reaction which was negative before treatment was positive with 14 mm after 2 years of treatment. Estimation of different cytokines after completion of treatment showed appreciable changes with remarkable reduction in the levels of proinflammatory cytokines (IFN and TNF)	

1. Chakraborty D, Dinda AK, Sengupta U, Das P, Chakraborty T, Sengupta J. Therapeutic effect of Mercurius solubilis on immune status of a borderline leprosy case. Indian Journal of Research in Homoeopathy 2014 ; 8(2):100-106

3.4.2 Basic Research

Researches in physics, chemistry, life sciences play a role in validation of principles of Homœopathy. Various authorities like Rustom Roy, J. Sainte Laudy and Nobel Laureates Luc Montagnier and Brian Josephson have supported the scientific plausibility of homœopathic medicines. On the clinical front, results with the use of homœopathic medicines are evident. But validation of principles of Homœopathy requires an answer to certain fundamental questions such as: has the law of similars been scientifically demonstrated? Is it universal? What are its diversities? What is the difference between a homœopathic potency and a simple dilution? Do homœopathic medicines have

recognizable and recordable biological effects? What are the pathways of action of homœopathic medicines in human beings, animals and plants? What are the effects of exposure to external factors on homœopathic medicines? What new materials can be added into homœopathic materia medica? These are questions that seek solutions.

Basic researches in the field of Homœopathy have been conducted on biological models (in-vivo and in-vitro) and on physico-chemical models. Studies have been conducted in veterinary medicine identifying the action of Homœopathic medicines in animal diseases. Also, ultra-high dilutions have been used in agricultural farms to counter plant diseases and in order to increase the yield and productivity of plants. In research experiments database HomBrex, there are approximately 1725 experiments conducted in various fields like biochemistry (145), cell biology (249), developmental biology (72), immunology (226), microbiology (126), neurophysiology (61), oncology (79), pharmacology (213), physiology (594), psychophysiology (79), toxicology (273), traumatology (49), virology (43), pharmacy (15), histology (01), morphology (01), physical chemistry (191 and physics (01) in various biological models like animals (as a whole or parts/organs), fungus, human (as a whole or parts/organs), micro-organisms, plants etc. (till Sept 2012)[37]

“There is identifiable interaction of ultra-high dilutions with living systems. However, comprehension of an explanation of mechanism of this interaction on the basis of present-day understanding of science is in its nascent stage. Basic research provide us with a stable, replicable biological model, *in vitro* or otherwise, which could be used to demonstrate the biological effects and investigate the mechanisms of serially agitated high dilutions (SAHD)” or potencies.

With regard to these studies, it is opined that “What is needed in future research is not an extravagant and creative model which shows impressive biological effects and could be potentially telling about homœopathic clinical effects but is either so difficult or expensive that it is unlikely to be repeated by anyone or so unbelievable that no widely read mainstream journal would publish it. What is needed is a very simple biological model, which can show robust, reproducible effects of such highly diluted SAHDs”[52].

CCRH has undertaken collaborative studies on basic research with scientific and technical institutes and organizations in the country having the required intellectual aptitude and the scientific resource. Researchers of repute took up studies under the Extra-Mural research Scheme of the Department of AYUSH to conduct such studies. Outcomes of some of these studies are given.

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[52]Walach R. Homeopathy in Clinical Research in Complementary Therapies: Principles, Problems and Solutions. Churchill Livingstone; 2002

Table 19 Basic research studies

Studies conducted by CCRH through collaboration				
Sl. No	Collaborating Institute	Title of the Article	Model	Outcome (s)
1.	Jawaharlal Institute of Post-Graduate Medical Education & Research (JIPMER), Puducherry	Effect of homœopathic drugs used in insomnia on serum melatonin and cortisol levels in healthy volunteers.	Healthy human	Study showed that 38.1% volunteers responded to *Nux vomica* and 23.1% to *Coffea cruda*, in terms of sleep related symptoms. There was a significant reduction in mean serum cortisol levels among responders to *Nux vomica* (38.9±8.8ng/ml) in comparison to non responders (101±25.3 ng/ml)
2.	Scientists from Bhabha Atomic Research Centre, Trombay	An exploratory study on scientific investigations in homeopathy using medical analyzer	Healthy human	Pre- and post-interventional variability spectra of heart rate and blood flow of 77 subjects were recorded. It was observed that *Aconite napellus* in 30C potency produced a response in heart rate variability, and blood flow variability with 1M potency. *Sulphur* 200C and 1M, *Gelsemium* 200C and *Pulsatilla* 200C, produced a 62.5% response in heart rate variability against the placebo response of 16.6%. *Gelsemium*, *Phosphorus*, and *Sulphur* produced a response in blood flow variability with 1M potency, similar to the response of *Aconitum napellus* 1M. It was concluded that it is possible to record the response of homœopathic medicines on physiologic parameters of the autonomic nervous system.

Sl. No	Collaborating Institute	Title of the Article	Model	Outcome (s)
3.	Osmania University, Hyderabad.	Preliminary studies on analgesic and behavioural activities of the homœopathic formulations of *Chenopodium ambrosioides* in experimental animal models.	Rat	Results revealed that four potencies (3x, 6x, 12x and 30C) of *Chenopodium ambrosioides* increased the latency time required to raise and to lick, the fore or hind paw, for thermal sensation on hot plate test and for cold sensation on ice plate test. Rat also underwent increase in quantum threshold of pressure to mechanical induced pain but depressed motor coordination and locomotor activity.
4.	Osmania University, Hyderabad.	A preliminary study to evaluate analgesics and behavioral activities of the homœopathic drug *Anagalis arvensis* in rats	Rat	Analgesic and behavioural effects of the 3x, 6x, 12x and 30C potencies of *Anagalis arvensis* were maximum on the 10th day, but subsided on the 20th and 30th days. The preliminary results suggest that *Anagalis arvensis* may have a role as CNS depressant.
5.	Osmania University, Hyderabad.	Biochemical and hematological evaluation of different potencies of homœopathic drug Ricinus communis	Rat	Four potencies of *Ricinus communis* (3X,6X,12X and 30C) showed variable effects on the biochemical markers (serum glucose, serum cholesterol, serum triglycerides, serum total protein, serum albumin, serum urea, serum SGOT & SGPT) and hematological markers (hemoglobin, RBC, WBC and DLC), and

Sl. No	Collaborating Institute	Title of the Article	Model	Outcome (s)
				decrease the body weight when administered daily for 14 days.
6.	School of Tropical Medicine, Kolkatta	Decreased intensity of Japanese encephalitis (JE) virus infection in chick chorioallantoic membrane under influence of ultra diluted *Belladonna* extract.	Chorioallantoic membrane of chick embryo	*Belladonna* in 3C, 6C, 30C and 200C significantly decreased pock count in Chorioallantoic membrane in comparison to JE virus control and could inhibit JE virus infection in the membrane.
7.	School of Tropical Medicine, Kolkatta	Suckling mice of "*Belladonna* 200C fed mothers evade virulent Nakayama strain Japanese encephalitis virus infection.	Suckling mice	Average survival of suckling mice of mother fed with *Belladonna* 200C was significantly higher compared to control group.
8.	Indian Institute of Technology, New Delhi.	A structural study of homœopathic medicine: A pilot study	Physical	Homœopathic medicines (*Belladonna, Colchicum* and *Pulsatilla* exhibited nanoparticles and conglomerates of them. The nanoparticles along with the interfacial water on their surface might carry information, which biological systems are able to identify to the target. It is concluded that Homœopathy might represent as nano-medicine system.
9.	Departments of Zoology, Osmania University, Hyderabad, India	*Indigofera tinctoria:* Preliminary experimental study evaluating its analgesic and behavioural activities in animals	Rat	The results revealed that all the four potencies of *I. tinctoria* had increased the latency time required to raise and to lick the fore or

Sl. No	Collaborating Institute	Title of the Article	Model	Outcome (s)
				hind paw for thermal sensation on hot plate test and for cold sensation on ice plate test. They had also increased the quantum of threshold pressure to mechanical induced pain on Randall -Selitto test but depressed the motor coordination and locomotor activities. The observed activities suggest that the homoeopathic formulations of I. tinctoria possess CNS depressant property. However, further studies are required for a definitive conclusion.
10.	Department of Bio-chemical Engineering and Biotechnology, Indian Institute of Technology Delhi, New Delhi, India	Homeopathy emerging as nanomedicine		During the violent strokes involved in potentization, information arising from the serially diluted starting-substance might be encrypted by epitaxy on silicon-rich crystalline nanoparticles present in the resulting homeopathic medicine. The 'size' of the information encrypted on nanoparticles might vary together with the degree of dilution. As homeopathic medicines exhibit healing effects, these nanoparticles along with the interfacial water on their surface might carry this information - which biological systems are able to identify - to the target. As various forms of silica are known to interact with proteins and cells of

Sl. No	Collaborating Institute	Title of the Article	Model	Outcome (s)
				the immune system, homeopathy might represent a nanomedicine system. Possible confirmation, however, requires further research in materials and interfacial water.
11.	Department of Endocrinology, Dr. ALM Post Graduate Institute of Basic Medical Sciences, University of Madras	Effect of homeopathic preparations of *Syzygium jambolanum* and *Cephalandra indica* on gastrocnemius muscle of high fat and high fructose-induced type-2 diabetic rats	In-vitro	In the present study homeopathic preparations of *S. jambolanum* and *C. indica*, including ultramolecular dilutions exhibit antidiabetic effects, improving insulin action through activation of insulin signaling molecules in skeletal muscle of type-2 diabetic rats.
12.	Division of Molecular Medicine, Bose Institute	*Calcarea carbonica* induces apoptosis in cancer cells in p53-dependent manner via an immuno-modulatory circuit.	Mice	*Calcarea carbonica* administration to Ehrlich's ascites carcinoma (EAC)- and Sarcoma-180 (S-180)-bearing Swiss albino mice resulted in 30-35% tumor cell apoptosis, it failed to induce any significant cell death in ex vivo conditions. *Calcarea carbonica* prevented tumor-induced loss of effector T cell repertoire, reversed type-2 cytokine bias and attenuated tumor-induced inhibition of T cell proliferation in tumor-bearing host.

Sl. No	Collaborating Institute	Title of the Article	Model	Outcome (s)
13.	Department of Zoology, Osmania University, Hyderabad, Andhra Pradesh, India	Preliminary study to evaluate analgesic and behavioural effects of *Lycopodium clavatum* in experimental animals	Rats	This study suggests that the homoeopathic formulations (3X, 6X, 12X and 30C) of *Lycopodium clavatum* possess central nervous system (CNS) depressant activity. So the drug *Lycopodium clavatum* can be taken up for further research for its possible human use.
14.	Division of Molecular Medicine, Bose Institute, P1/12, CIT Scheme VIIM, Kolkata 700054, India.	Contribution of the ROS-p53 feedback loop in *Thuja*-induced apoptosis of mammary epithelial carcinoma cells.	In-vitro	Results showed that *Thuja* successfully induced apoptosis in functional p53-expressing mammary epithelial carcinoma cells. Abrogation of intracellular reactive oxygen species (ROS), prevention of p53-activation, knockdown of p53 or inhibition of its functional activity significantly abridged ROS generation. Notably, under these conditions, *Thuja*-induced breast cancer cell apoptosis was reduced, thereby validating the existence of an ROS-p53 feedback loop.
15.	Department of Pharmacology, All India Institute of Medical Sciences, New Delhi, India	Evaluation of safety profile of homoeopathic mother tinctures		Results indicate that there were no toxic symptoms observed in tested animals. Results of sub-acute toxicity study did not show any change in body weight, haematological and biochemical parameters as compared to control. The histopathological

Sl. No	Collaborating Institute	Title of the Article	Model	Outcome (s)
				examination of kidney and liver also did not reveal any organ toxicities.
16.	Department of Medical Elementology and Toxicology, Neurotoxicology Lab, Jamia Hamdard, New Delhi, India	Protective role of homoeopathic medicines on cerebral ischaemia in animals	Rat	The study has shown that the homoeopathic drugs have protected most of the studied parameters significantly but further studies are required to comment on the mechanism and reproducibility of homoeopathic drugs.
Studies conducted under EMR Scheme				
Sl. No	Institute	Title of the Article	Model	Outcome (s)
17.	Department of Zoology, University of Kalyani, Kalyani, West Bengal	Protective potentials of a potentized homeopathic drug , *Lycopodium* 30, in ameliorating azo dye induced hepatocarcinogenesis in mice.	Mice	The protective potentials of a potentized homeopathic drug, *Lycopodium* 30 was tested in mice chronically fed p-dimethyl amino azo benzene (p-DAB) - an initiator, and phenobarbital (PB) - a promoter of hepatic cancer, by using some cytogenetic endpoints. The effects of chronic treatment of the carcinogens were assessed at different intervals of fixation, and compared with that of mice fed conjointly with the carcinogens and the homeopathic remedy. Both the assay systems indicated considerable protective potentials of the homeopathic remedy

Sl. No	Institute	Title of the Article	Model	Outcome (s)
				against p-DAB induced hepatocarcinogenesis in mice.
18.	Department of Zoology, University of Kalyani, Kalyani, West Bengal	Efficacy of the Potentized Homeopathic Drug , *Carcinosin* 200 , Fed Alone in Combination with another drug , *Chelidonium* 200 , in Amelioration of p-dimethyl amino azo benzene (p-DAB) induced Hepatocarcinogenesis in Mice.	Mice	Liver tumors were induced in mice through chronic feeding of p-DAB (initiator) and phenobarbital (promoter). The relative efficacy of the two potentized remedies, alone or in combination, in combating hepatocarcinogenesis was assessed through several cytogenetical endpoints such as chromosome aberrations, induction of micronuclei, sperm head anomaly, and mitotic index at several intervals of fixation. Several toxicity biomarkers were also assayed. Both *Carcinosin* 200 and *Chelidonium* 200 when administered alone show considerable ameliorative effect against p-DAB-induced hepatocarcinogenesis in mice; but the conjoint feeding of these two drugs appears to have had a slightly greater protective effect.
19.	Department of Zoology, University of Kalyani, Kalyani, West Bengal	Amelioration of Carcinogen-Induced Toxicity in Mice by Administration of a Potentized Homeopathic Drug, *Natrum Sulphuricum* 200	Mice	To examine if a potentized homeopathic drug, *Natrum sulphuricum* 200 has protective potentials against hepatocarcinogenesis, liver tumors were induced in mice

Sl. No	Institute	Title of the Article	Model	Outcome (s)
				through chronic feeding of p-dimethylaminoazobenzene (p-DAB; initiator of hepato-carcinogenesis) and phenob-arbital (PB; promoter). Administration of *Nat. Sulph* 200 reduced aspartate amino transferase (AST), alanine amino transferase (ALT), acid (AcP) and alkaline (AlkP) phosphatases, lipid peroxidation (LPO) and and increased glutathione (GSH) content.
20.	Jadavpur University, Jadavpur, West Bengal	Search for potential Anti Cancer Agent: Evaluation of anticancer activity of *Carcinosin*, *Apis* and *Thuja*.	Mice	Evaluation of Anticancer Activity of Potentised and Dynamized *Carcinocin* 200, *Thuja* 2000 & *Apis mellifica* 200 against Ehrlich Ascites Carcinoma (EAC) cells in Swiss Albino mice, showed that the survival time after administration of *Carcinosin* 1M was significant in comparison to placebo group (6 live animals vs. 2 live animals after 15 days respectively). Percentage of inhibition of ascitic cells and fluid activity increased with increasing dilution highest being 16.22% of *Carcinosin* 1M.
21.	Department of Zoology, Viswa Bharti University, Santiniketan, West Bengal.	Effects of three potentized drugs on alcohol-induced changes in the nerve plexus of heart and serum parameters in albino rats.	Mice	Alcohol-fed rats treated with *Nux Vomica* 30C showed 20±3% degeneration; treated with *Chelidonium* 30C showed 23±4% degeneration of

Sl. No	Institute	Title of the Article	Model	Outcome (s)
				nerve plexus in comparison to untreated rats (40±5%) of nerve plexus degeneration; *Nux vomica* and *Chelidonium* 30C also reduced the serum parameters significantly ($P<0.05$).
22.	Neurotoxicology laboratory, Department of Medical Elementology and Toxicology, Jamia Hamdard, New Delhi	Neuroprotective effect of *Bellis perennis* and *Hypericum perforatum* on PC12 cells.	Rat	The medicines (*Bellis Perennis* and *Hypericum perforatum* in 6C and 30C potency) in three different concentrations in PC12 cells differentiated with nerve growth factor. Activities of various enzymes studied were significantly restored in drug treated groups as compared to positive controls, which indicate that these medicines have preventive role on differentiated PC12 cells.
23.	Department of Pharmaceutical Sciences and Technology, Institute of Chemical Technology, Mumbai.	*In vitro* evaluation of homeopathic drugs for antioxidant activity.	Physical	*Acid phosphoricum*, *Ignatia*, *Nux vomica*, *Phosphorus* and *Zinc* with 4 different concentrations of each were evaluated for their antioxidant potential. Reducing power assay of these drugs showed significant activity ($p<0.05$) when compared to control. The highest

Sl. No	Institute	Title of the Article	Model	Outcome (s)
				activity was noted with *Nux vomica* (30C). In case of *Phosphorus* and *Zincum metallicum*, reducing power assay increased with increasing potency, whereas, in case of *Acid phos.*, reducing power assay decreased with increasing potency. *Ignatia amara* and *Nux vomica* showed similar activity in all potencies.
24.	Institute of Minerals and Materials Technology, CSIR, Bhubaneswar	Effects of potentised homoeopathic medicines, *Arsenicum album* and *Baryta carbonica* on growth and pigment concentration of wheat triticum aestivum L.)"	Plant Model	Wheat seedlings (*Triticum aestivum L.*) of Sonalika variety were exposed to different centesimalpotency (strength) of homeopathic medicines, *Arsenicum album* and *Baryta carbonica*, and the effectwas analyzed on various parameters starting from germination to pigment concentration of seedlingsgrown in vitro. Result showed that, although there was no change in the seedling dry weight but a significant positive effect was observed on other growth parameters viz., shoot length, root

Sl. No	Institute	Title of the Article	Model	Outcome (s)
				length,fresh weight and pigment concentration as compared to untreated. Despite being successively diluted beyond the Avogadro limit these potentised medicines affected the plant growth and development.
25	Indian Institute of Technology, Kharagpur, West Bengal	Antidiabetic effect of *Cephalandra indica* *Q* in diabetic rats	Rat	There was a significant reduction of blood glucose level, regain of bodyweight, and regeneration of beta-cells in the pancreas of the rats treated with mother tincture of Cephalandra Indica. Mother tincture-treated 3T3 cells also showed reduced uptake of glucose in comparison to normal cells.

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Some basic research studies undertaken by various Indian researchers in India and abroad published in internationally acclaimed peer reviewed journals:

Table 20 Basic research studies by Indian researchers in India and abroad

Sl. No	Title	Model Article	Outcome (s)
1.	Lipid peroxidation, erythrocyte antioxidants and plasma antioxidants in osteoarthritis before and after homeopathic treatment.	Human with osteoarthritis	Oxidative stress is increased in Osteoarthritis as indicated by increased lipid peroxidation (LP), superoxide dismutase (SOD), decreased vitamin C and antioxidant activity (AOA). On homeopathic treatment the LP decreased in the erythrocytes which showed reduced oxidative stress. This is further evidenced by returning of plasma vitamin C and erythrocyte SOD to the normal levels, but oxidant stress didn't completely overcome, as plasma AOA remained low after treatment.
2.	Alcohol concentration in the preparation of mother tinctures of vegetable origin. The example of *Holarrhena antidysenterica*	Physical	On the basis of physical, chemical and biological assay of different tinctures made with different concentrations, in the case of *Holarrhena antidysenterica* Wall, the best solvent was 70% v/v ethanol. This is different from the standard strong alcohol recommended in Homeopathic Pharmacopoeia.
3.	Potentized *Mercuric chloride* and *Mercuric iodide* enhance á-amylase activity in vitro	In-vitro	*Mercuric chloride* 30C and *Mercuric iodide* 30C in both water and aqueous ethanol media, enhanced á-amylase activity in starch significantly, compared to their respective controls.
4.	Evaluation of a homeopathic complex in the clinical management of udder diseases of riverine buffaloes	Buffaloes	Treatment was 80% and 96.72% effective in cases of fibrotic mastitis and nonfibrosed mastitis respectively. The homeopathic complex medicine may be effective and economical in the management of udder health problems of buffaloes.
5.	Comparative efficacy of homeopathic and allopathic systems of medicine in the management of clinical mastitis of Indian dairy cows	Cows	The overall effectiveness of homeopathic combination medicine in the treatment of acute non-fibrosed mastitis was 86.6% with a mean recovery period of 7.7 days (range 3–28), while cure rate for the antibiotic group was 59.2% with a mean recovery period of 4.5 days (range 2–15). The authors concluded that the combination of *Phytolacca, Calcarea*

Sl. No	Title	Model Article	Outcome (s)
			fluorica, Silica, Belladonna, Bryonia, Arnica, Conium and *Ipecacuanha* (Healwell VT-6) was effective and economical in the management of mastitis in lactating dairy cows.
6.	Effect of fortification of Mulberry leaves with homeopathic drug *Nux vomica* on *Bombyx Mori. L.*	*Bombyx. mori L.*	Silk worm (Bombyx mori L.) larvae were fed on Mulberry leaves treated with *Nux vomica* mother tincture. The impact on larval, cocoon, shell and pupal weight, silk ratio, average filament length and denier, and number of breakages during reeling were investigated. The results were positive in all parameters under study except cocoon weight, pupal weight, and the average denier of the filament.
7.	Effect of a Homeopathic complex on oestrus induction and hormonal profile in anoestrus cows	Cow	Treatment was 100% effective in inducing oestrus in anoestrus cows with mean interval of 27.5±5.3 days. All animals conceived and overall conception rate was 54.5% with 1.83 services per conception. In the homeopathic complex treated group, increased serum oestradiol concentration was observed compared to the pre-treatment and control value.
8.	Amelioration of root-knot disease of lady's finger plants by potentized *Cina* and *Santonin*	Plant	*Cina 30C* and *Santonin 30C* reduced nematode infestation of plants significantly in terms of root-gall number, root-protein content and nematode population in roots. *Santonin 30C* reduced root water content. *Santonin 30C* may have influenced the water channel proteins of root tissues, thereby altering the water contents of roots.
9.	Atrial Paroxysmal Tachycardia in Dogs and its Management with Homeopathic *Digitalis*—two case reports.	Dog	Homeopathic *Digitalis 6C* was evaluated in two clinical cases of atrial paroxysmal tachycardia in dogs. Tachycardia is common cardiac problems in dogs, and atrial paroxysmal tachycardia is a serious cardiac arrhythmia that may lead to syncope. Both

Sl. No	Title	Model Article	Outcome (s)
			adult dogs (Labrador and German Shepherd) were treated with *Digitalis 6C*, 4 drops orally four times daily for 7 days. Following treatment with *Digitalis 6C*, heart rate stabilized and synchronized atrial and ventricular electrical activity was restored in 7 days.
10.	Effects of *Cina* on root-knot disease of mulberry	Plant	Both pre- and post-treatment significantly reduced nematode infection in terms of root gall number and nematode population in root. All the treated plants showed improved growth in terms of fresh biomass of shoot and root, length of shoot and root, number of leaves, leaf surface area, root and leaf-protein content. *Cina* 200C is more effective than *Cina* mother tincture in all respects of nematode control as well as growth of the test plants. Pre-treatments show slightly better effects than the post-treatments.
11.	The defining role of structure (including epitaxy) in the plausibility of homeopathy	Physical	Preliminary data obtained using Raman and Ultra-Violet–Visible spectroscopy illustrate the ability to distinguish two different homeopathic medicines (*Nux vomica* and *Natrum muriaticum*) from one another and to differentiate, within a given medicine, the 6C, 12C and 30C potencies.
12.	Clinical management of idiopathic epilepsy in dogs with homoeopathic *Belladonna* 200C: a case series	Dogs	With continuation of *Belladonna* therapy, no fits were observed during 2–7 months follow-up. In two cases epileptic fits reappeared within 15–25 days of cessation of therapy. *Belladonna* therapy was resumed and seizure control was again achieved.
13.	Clinical management of babesiosis in dogs with homeopathic *Crotalus horridus* 200C	Dogs	*Crotalus horridus* 200C is as effective in causing clinical recovery in moderate cases of canine babesiosis caused by Babesia gibsoni as the standard drug Diminazine.

Sl. No	Title	Model Article	Outcome (s)
14.	Delayed luminescence of high homeopathic potencies on sugar globuli	Physical	Delayed luminescence signals of *Argentum metallicum* CMf (fincke) (100Mf), *Cantharis* CMf, *Bovista* CMf absorbed onto sugar globuli was observed by exciting them at their known resonance frequency of 2.060 MHz. Arnica CMf also showed delayed luminescence when excited at 2.060 MHz and at 1.828 MHz. Alc. The delayed luminescence signals were characterized by the coefficient B2 typical of the delayed luminescence of non-living complex systems, and by the coefficient B0 typical of living systems. Both coefficients can be considered as indicative of holistic quantum structures in homeopathic potencies.
15.	Immuno-modulatory activity of Toxicodendron pubescens in experimental models	In-vitro, mice	*Rhus toxicodendron* was found to intensify sheep RBCs induced antibody titer and delayed type hypersensitivity response in mice. Even higher dilutions such as 200C and 1000C were found to affect the immune response. In in-vitro assays, all the dilutions exerted stimulation of phagocytosis, candidacidal activity and chemotaxis of human polymorphonuclear cells.
16.	Dual effect of Toxicodendron pubescens on Carrageenan induced paw edema in rats	Rat	Administration of a single dose of *Rhus toxicodendron* 1h prior to injection of carrageenan significantly reduced the paw inflammation in a dose dependent manner. Administration of multiple doses of *Rhus toxicodendron* increased the intensity of inflammation induced by Carrageenan, but this was not statistically significant. *Rhus toxicodendron*, in crude form, exerts anti-inflammatory effects after a single dose and pro-inflammatory effect after multiple doses in Carrageenan induced paw inflammation in rats.
17.	Extreme homeopathic dilutions retain starting	Physical	Study demonstrated presence of physical entities in these extreme dilutions, in the

Sl. No	Title	Model Article	Outcome (s)
	materials: A nano particulate perspective		form of nanoparticles of the starting metals and their aggregates.
18.	*Chelidonium majus* 30C and 200C in induced hepato-toxicity in rats	Rat	*Chelidonium* in 30C and 200C exhibited anti-tumor and anti-oxidative stress potential against artificially induced hepatic tumors and hepato-toxicity in rats.
19.	Effect of dielectric dispersion on potentised homeopathic medicines	Physical	*Cuprum metallicum* in different potencies (30C, 200C and 1M) were subjected to experimentation in the frequency range of 100 kHz–1 MHz. The results showed that potentised homeopathic medicines, which are chemically identical with the vehicle, differ from one another in the arrangement of vehicle molecules.
20.	Modulation of arthritis in rats by Toxicodendron pubescens and its homeopathic dilutions	Rat	*Rhus toxicodendron* protected rats from complete Freund's Adjuvant-induced inflammatory lesions, body weight changes and hematological alterations. *Rhus toxicodendron* protected against radiological joint alterations due to arthritis. Arthritic pain scores were also favourably affected by *Rhus toxicodendron* All the dilutions of *Rhus toxicodendron* including crude form showed anti-arthritic activity.
21.	Anti-asthmatic and anti-anaphylactic activities of *Blatta orientalis* mother tincture	Guinea pigs, Rat	In *Blatta orientalis* mother tincture treated guinea pigs there was a significant protection against acetylcholine and histamine aerosol-induced bronchospasm. In active and passive anaphylaxis albino rat models, significant reduction in mesenteric mast cells degranulation, serum IgE level and eosinophil cell count was observed in *Blatta orientalis* mother tincture treated rat group when compared with sensitized control rat group.

Sl. No	Title	Model Article	Outcome (s)
22.	*Rhus toxicodendron* pubescens retains its anti-arthritic efficacy at 1M, 10M and CM homeopathic dilutions	Rat	1M, 10M and CM homeopathic dilutions of *Rhus toxicodendron* reduced primary and secondary arthritic lesions, improved body weight gain and protected rats against Complete Freund's Adjuvant induced hematological and radiological perturbations. A significant reduction in the serum levels of C-Reactive Protein and an improvement in pain threshold of injected paws were observed in the groups treated with the *Rhus toxicodendron* dilutions.
23.	Anxiolytic effect of homeopathic preparation of *Pulsatilla nigricans* in Swiss albino mice	Mice	*Pulsatilla* 3X and 6X was compared with diazepam for anxiolytic activity in Elevated Plus Maze and Open Field Test. The study showed an anxiolytic effect of homeopathic preparation of *Pulsatilla nigricans* comparable to that found with diazepam.
24.	Rapid green synthesis of silver nanoparticles from silver nitrate by a homeopathic mother tincture *Phytolacca decandra*	*In-vitro*	*Phytolacca decandra* precipitated silver nanoparticles in ambient conditions. The nanoparticles had 91 nm particle size, with polydispersity index of 0.119 and zeta potential of -15.6 mV. The silver nanoparticles showed anticancer and antibacterial properties.
25.	Phenotypic evidence of ultra-highly diluted homeopathic remedies acting at gene expression level: a novel probe on experimental phage infectivity in bacteria	*In-vitro*	*Belladonna 30C, Rhus toxicodendron 30C, Arnica 30C* claimed to have antiviral effects and can demonstrate any discernible action in bacteria Escherichia coli through modulating infectivity potentials of the bacteriophage àX174 DNA. Each homeopathic remedy showed a significant decrease in plaque number on pretreated bacteria (1 h prior to infection) with respect to untreated and placebo-treated controls; there was only an insignificant change in the plaque number when àX174 was pretreated with the drugs. Arnica montana 30C was tested to see,

Sl. No	Title	Model Article	Outcome (s)
26.	Potential of the homeopathic remedy, *Arnica montana* 30C, to reduce DNA damage in Escherichia coli exposed to ultraviolet irradiation through up-regulation of nucleotide excision repair genes	*In-vitro*	whether it can modulate the expression of nucleotide excision repair genes in Escherichia coli exposed to ultraviolet irradiation. *Arnica* 30C helped to repair the DNA damage through up-regulation of repair genes and also ameliorated the oxidative stress through the reduction of reactive oxygen species generation and suitable modulation of anti-oxidative stress enzymes.
27.	Potentized homeopathic drug *Arsenicum album* 30C inhibits intracellular reactive oxygen species generation and up-regulates expression of arsenic resistance gene in arsenic-exposed bacteria Escherichia coli	*In-vitro*	*Arsenicum album* 30C ameliorated arsenic toxicity and DNA damage, validating efficacy of ultra-highly diluted remedies used in Hom?opathy.
28.	Possible signalling cascades involved in attenuation of alloxan-induced oxidative stress and hyperglycemia in mice by ethanolic extract of *Syzygium jambolanum:* drug-DNA interaction with calf thymus DNA as target	Mice	Ethanolic extract of *Syzygium jambolanum* has anti-oxidant as well as anti-hyperglycemic activities in diabetic mice.
29.	Analysis of the capability of ultra-highly diluted glucose to increase glucose uptake in arsenic-stressed bacteria Escherichia coli	In-vitro	Ultra-highly diluted and agitated glucose mimicks action of actual glucose supplementation and its ability to modulate expressions of hexokinase and glucokinase enzymes and glucose permease genes.
30.	Potentized homeopathic drug *Arsenicum album* 30C positively modulates protein biomarkers and gene expressions in Saccharomyces cerevisiae exposed to arsenate	In-vitro	*Arsenicum album* 30C administration decreased lipid peroxidation, protein carbonylation, DNA damage, Reactive oxygen species formation and Msn 2 and Yca-1 expressions and increased cell viability, total thiol, glucose-6-phosphate

Sl. No	Title	Model Article	Outcome (s)
			dehydrogenase, catalase and superoxide dismutase significantly (P<0.05), in S. cerevisiae exposed to arsenate.
31.	An initial report on the efficacy of a millesimal potency *Arsenicum album* LM 0/3 in ameliorating arsenic toxicity in humans living in a high-risk arsenic village	Human	After two months of homeopathic remedy administration, the verum-fed subjects showed positive modulations with study parameters with slight lowering of matrix metalloproteinase activity as compared to the placebo group. *Arsenicum album* LM 0/3 showed a potential for use in high-risk arsenic contaminated villages as an interim treatment for amelioration of arsenic toxicity.
32.	A Follow-Up Study on the Efficacy of the Homeopathic Remedy *Arsenicum album* in Volunteers Living in High Risk Arsenic Contaminated Areas	Human	Study volunteers reported status quo maintained after the improvement they achieved within first three months of homeopathic treatment, in respect of their general health and spirit, and appetite and sleep. Therefore, administration of *Arsenicum album* 200C considerably ameliorates symptoms of arsenic toxicity on a long-term basis, and can be recommended for interim use, particularly in high risk remote villages.
33.	Modulation of Signal Proteins: A Plausible Mechanism to Explain How a Potentized Drug *Secale cor.* 30C Diluted beyond Avogadro's Limit Combats Skin Papilloma in Mice	Mice	There was reduction in genotoxic and DNA damages in bone marrow cells of *Secale cornutum* 30C fed mice, as revealed from cytogenetic and Comet assays. Immunofluorescence studies also suggested reduced expression of proteins related to cancer in *Secale cornutum* 30C fed mice, thereby showing its anti-cancer potentials against skin papilloma.
34.	Evidences of protective potentials of microdoses of ultra-high diluted arsenic trioxide in mice receiving repeated injections of arsenic trioxide	Mice	*Arsenicum album* 200C has hepatoprotective potentials in mice subjected to repeated injections of arsenic trioxide. *Arsenicum album* 200C fed mice showed positive modulations of all studied parameters.

Sl. No	Title	Model Article	Outcome (s)
35.	Amelioration of carcinogen-induced toxicity in mice by administration of a potentized homeopathic drug, *Natrum sulphuricum* 200	Mice	Mice were subjected to development of hepatic carcinogenesis by administration of pDAB. Administration of *Natrum sulphuricum* 200C reduced genomic damage, activities of acid phosphatases, alkaline phosphatases, aspartate amino transferase, alanine amino transferase, lipid peroxidation and increased glutathione contents in comparison to control.
36.	Comparative efficacy of two microdoses of a potentized homeopathic drug, arsenicum album, to ameliorate toxicity induced by repeated sublethal injections of *Arsenic trioxide* in mice.	Mice	Mice were fed with *Arsenicum album* 6C and 30C and were studied for parameters like chromosome aberrations, micronuclei, sperm head abnormality, frequencies and activities of acid and alkaline phosphatases, aspartate and alanine aminotransferases and lipid peroxidation which were reduced in both drug-fed series as compared to controls. Both remedies indicated potentials of use against arsenic intoxication.
37.	A potentized homeopathic drug, *Arsenicum album* 200, can ameliorate genotoxicity induced by repeated injections of arsenic trioxide in mice.	Mice	Arsenic stressed mice were given *Arsenicum album* 200C. The mice were then sacrificed at specified intervals to study for toxicity assays, such as cytogenetical (chromosome aberrations, micronuclei, mitotic index, sperm head anomaly) and biochemical (acid and alkaline phosphatases, lipid peroxidation), periodically. Drug fed mice showed reduced toxicity levels in respect of all the parameters studied as compared to controls.
38.	Homeopathic remedy for arsenic toxicity?: Evidence-based findings from a randomized placebo-controlled double blind human trial	Human	Decreased levels of hemoglobin, packed cell volume, neutrophil percentages, and GSH content and low G6PD activity were observed in the arsenic exposed people (n=18, 14 males and 04 females). The administration of *Arsenicum album* 30C made positive modulations of the studied parameters. Most of the subjects reported better appetite and improvement in general health, thereby

Sl. No	Title	Model Article	Outcome (s)
			indicating possibility of its use in remote arsenic-contaminated areas as an interim health support measure to a large population at risk.
39.	Can administration of potentized homeopathic remedy, *Arsenicum album*, alter antinuclear antibody (ANA) titer in people living in high-risk arsenic contaminated areas? I. A correlation with certain hematological parameters	Human	Randomly selected volunteers in two arsenic contaminated villages and one arsenic-free village in West Bengal (India) were periodically tested for their ANA titer as well as various blood parameters. Positive modulation of ANA titer was observed along with changes in total count of red blood cells, white blood cells, packed cell volume, hemoglobin content, erythrocyte sedimentation rate and blood sugar level, mostly within 2 months of drug administration. *Arsenicum album* appears to have great potential for ameliorating arsenic induced elevated ANA titer and other hematological toxicities.
40.	Effect of a homeopathic drug, Chelidonium, in amelioration of p-DAB induced hepatocarcinogenesis in mice	Mice	The homeopathic drug *Chelidonium* (30C and 200C) exhibited anti-tumor and anti-genotoxic activities and modulated activities of some marker enzymes. The mice fed with *Chelidonium* had reduced genotoxic effects to a significant extent ($p < 0.05$ to $p < 0.001$).
41.	Evaluation of protective potentials of a potentized homeopathic drug, *Chelidonium majus*, during azo dye induced hepatocarcinogenesis in mice	Mice	Chelidonium 30C and 200C modulated toxicity marker enzymes like acid and alkaline phosphatases, peroxidases, glutamate oxaloacetate and glutamate pyruvate transaminases in liver, kidney and spleen tissues of the carcinogen fed mice. The microdoses of *Chelidonium* may be used in delaying/protecting liver cancer.
42.	Efficacy of the potentized homeopathic drug, *Carcinosin* 200, fed alone and in combination with another drug, *Chelidonium* 200, in	Mice	*Carcinosin* 200C and *Chelidonium* 200C when administered alone show considerable ameliorative effect against p-DAB-induced hepatocarcinogenesis in mice; but the conjoint feeding of these two drugs appears

Sl. No	Title	Model Article	Outcome (s)
	amelioration of p-dimethyl aminoazobenzene-induced hepatocarcinogenesis in mice		to have had a slightly greater protective effect. The studied homeopathic remedies have the potential to be used as complementary and alternative medicine in liver cancer therapy, particularly as supporting palliative measures.
43.	Comparative Efficacy of Pre-feeding, Post-feeding and Combined Pre- and Post-feeding of Two Microdoses of a Potentized Homeopathic Drug, *Mercurius solubilis*, in Ameliorating Genotoxic Effects Produced by *Mercuric Chloride* in Mice	Mice	The mice were assessed for genotoxic effects through conventional endpoints, i.e., chromosome aberrations, micronuclei, mitotic index and sperm head abnormality, keeping suitable controls. The amelioration by *Mercurius solubilis* 200C was found to be pronounced than identical controls. The potentized *Mercurius solubilis* can serve as possible anti-genotoxic agents against specific environmental mutagens, including toxic heavy metals.
44.	Can homeopathic arsenic remedy combat arsenic poisoning in humans exposed to ground water arsenic contamination?: a preliminary report on first human trial	Human	The *Arsenicum album* 30C was administered to a group of arsenic affected people and contents in their urine and blood were determined periodically. Various enzymes and compounds in the blood, e.g. aspartate amino transferase, alanine amino transferase, acid phosphatase, alkaline phosphatase, lipid peroxidation and reduced glutathione, were also periodically monitored up to three months. The results suggested that the drug can alleviate arsenic poisoning in humans.
45.	Ameliorating effect of microdoses of a potentized homeopathic drug, *Arsenicum album*, on arsenic-induced toxicity in mice	Mice	The mice were treated with *Arsenicum album* 30C and 200C which ameliorated arsenic-induced toxicity to a considerable extent as compared to various controls. The results supported the postulate that microdoses of potentized *Arsenicum album* are capable of combating arsenic intoxication in mice.
46.	Protective potentials of a plant extract *(Lycopodium clavatum)* on mice chronically	Mice	Levels of study biomarkers in both liver and spleen tissues were positively altered along with a significant reduction of tumor

Sl. No	Title	Model Article	Outcome (s)
	fed hepato-carcinogens		incidence in liver of carcinogen intoxicated mice treated with spore extract of *Lycopodium clavatum*. The results validated the use of this plant extract in complementary and alternative medicines against hepato-toxicity.
47.	Supportive evidence for the anticancerous potential of alternative medicine against hepatocarcinogenesis in mice	Mice	The study aimed at examining the anti-cancer activities of *Lycopodium clavatum* 200C in carcinogenesis induced in mice. *Lycopodium clavatum* 200C reduced cytogenetic damages yielding positive modulations of all biochemical, pathological and other risk factors, cell viability and expression of p53 protein and matrix metallo-proteinases as compared to controls.
48.	Protective potentials of a potentized homeopathic drug, *Lycopodium* 30C, in ameliorating azo dye induced hepatocarcinogenesis in mice	Mice	The effects of chronic treatment of mice with carcinogens were assessed at different intervals of fixation and compared with that of mice fed conjointly with the carcinogens and the *Lycopodium clavatum* 30C. The assay systems indicated considerable protective potentials of the homeopathic remedy against p-DAB induced hepatocarcinogenesis in mice.
49.	Why Extreme Dilutions Reach Non-Zero Asymptotes: A Nanoparticulate Hypothesis Based on Froth-Flotation.	Physical	The presence of active medicinal ingredient as well as the therapeutic efficacy of hom?opathic medicines has been contentious because existence of even traces of the starting raw materials in them is inconceivable. In this paper, the authors have proposed and validated a hypothesis to explain how nanoparticles are retained even at such enormous dilution levels. It is proposed that the nanoparticles in dilutions levitate to the surface and are accommodated as a monolayer at the top. This dominant population at the air-liquid interface is preserved and carried to the subsequent step thereby forming an asymptotic concentration.

Sl. No	Title	Model Article	Outcome (s)
50.	Effects of *Calendula officinalis* on human gingival fibroblasts	Human	*Calendula* inhibits HGF-mediated collagen degradation and MMP-2 activity more than the corresponding concentration of quercetin. This may be attributed to additional components in *Calendula* other than quercetin.
51.	Antimalarial potential of *Malaria nosode* 30 and 200 against Plasmodium berghei infection in BALB/c mice.	Mice	*Malaria nosode* 30 possesses considerable in vivo antiplasmodial activity against P. berghei infection as compared to Nosode 200 as evident from the chemosuppression obtained using Peter's 4-day test. Further, studies on the drug can be carried out to establish its antimalarial potential in monotherapy or in combination with other homeopathic drug formulations.
52.	Anxiolytic effect of homeopathic preparation of *Pulsatilla nigricans* in Swiss albino mice.	Mice	Both diazepam and *Puls* showed significant anxiolytic activity in EPM and OFT test compared to control. The total number of entries and time spent in open arm in EPM was increased by both diazepam and Puls, the effect of 3X dilution of *Puls.* was greater than diazepam. The anxiolytic effect is greater for the 3X dilution than 6X dilution of *Puls.*
53.	Anxiolytic effect of homeopathic preparation of *Pulsatilla nigricans* in Swiss albino mice	Mice	The study showed an anxiolytic effect of homeopathic preparation of *Pulsatilla nigricans* comparable to that found with a standard drug.
54.	Homeopathic treatment for peripheral nerve regeneration: an experimental study in a rat sciatic nerve transection model	Rats	*Hypericum* improves functional recovery of peripheral nerve regeneration in rats. Functional study showed faster and better recovery of regenerated axons in *Sil./Hypericum* than in *Sil* group ($P < 0.05$). Gastrocnemius muscle mass in *Sil./Hypericum* was significantly greater than in *Sil.* group. Morphometric indices of regenerated fibers showed number and diameter of the myelinated fibers in *Sil./Hypericum* were

Sl. No	Title	Model Article	Outcome (s)
			significantly higher than in control group. Immunohistochemistry, showed the location of reactions to S-100 in Sil/Hypericum was clearly more positive than in Sil group.
55.	A study of the effect of mother tincture of *Syzygium jambolanum* on metabolic disorders of Streptozotocin induced diabetic male albino rat	Rat	The homoeopathic mother tincture of *Syzygium jambolanum* has therapeutic effect on metabolic disorders and oxidative injuries in Streptozotocin induced diabetic male albino rats.
56.	Antidiabetic effect of *Cephalandra indica Q* in diabetic rats	Rats	There was a significant reduction of blood glucose level, regain of body weight, and regeneration of beta-cells in the pancreas of the mother tincture-treated rats. Mother tincture-treated 3T3 cells also showed reduced uptake of glucose in comparison to normal cells. The present study clearly indicates a significant antidiabetic effect of *Cephalandra indica* and lends support for its usage as a homoeopathic medicine.
57.	Pharmacognostic evaluation of *Heliotropium peruvianum L.*: A homoeopathic drug	Plant	The powder microscopic features and organoleptic characters along with anatomical and Physico-chemical studies, besides HPTLC fingerprinting are diagnostic to establish the standards for the drug.
58.	Homeopathic mother tincture of *Phytolacca decandra* induces apoptosis in skin melanoma cells by activating caspase-mediated signaling via reactive oxygen species elevation.	*In-vitro*	Results showed that PD administration caused a remarkable reduction in proliferation of A375 cells, without showing much cytotoxicity on peripheral blood mononuclear cells. Generation of ROS and DNA damage, which made the cancer cells prone to apoptosis, were found to be enhanced in PD-treated cells. Overall results demonstrate anticancer potentials of PD on A375 cells through activation of caspase-mediated signaling and ROS generation.

Sl. No	Title	Model Article	Outcome (s)
59.	The potentized homeopathic drug, *Lycopodium clavatum* (5C and 15C) has anti-cancer effect on hela cells in vitro.	In-vitro	Results revealed that administration of LC-5C and LC-15C had little or no cytotoxic effect in normal peripheral blood mononuclear cells, but caused considerable cell death through apoptosis in cancer (HeLa) cells, which was evident from the induction of DNA fragmentation, the increases in the expressions of protein and mRNA of caspase 3 and Bax, and the decreases in the expressions of Bcl2 and Apaf and in the release of cytochrome-c. Thus, the highly-diluted, dynamized homeopathic remedies LC-5C and LC-15C demonstrated their capabilities to induce apoptosis in cancer cells, signifying their possible use as supportive medicines in cancer therapy.
60.	Antimalarial potential of *China* 30 and *Chelidonium* 30 in combination therapy against lethal rodent malaria parasite: *Plasmodium berghei.*	Mice	The combination of *China* 30 and *Chel.* 30 exhibited complete parasite clearance by the 28th day post-inoculation which was similar to the positive control group. Both the groups exhibited enhanced mean survival time (MST) 28±0 days, whereas, the mice of infected control group survived up to 7.6±0.4 days only. The combination had a significant preventive activity ($p<0.0005$), with 89.2% chemo suppression which was higher than the standard drug, pyrimethamine (83.8%). It also showed a moderate curative activity with complete clearance of parasite in 50% of surviving mice, and enhancing the MST of mice up to 26.8±2.8 days. These findings point to the significant antiplasmodial efficacy of the combination of these homeopathic drugs against Plasmodium berghei.
61.	Antihyperglycemic drug *Gymnema sylvestre* also shows anticancer potentials in human.	*In-vitro*	Overall results indicate GS to have significant anticancer effect on A375 cells apart from its reported antidiabetic effect, indicating possibility of its palliative use in patients with symptoms of both the diseases.

Sl. No	Title	Model Article	Outcome (s)
62.	Anti-proliferative effects of homeopathic medicines on human kidney, colon and breast cancer cells		This study provides preliminary in vitro evidence indicating the potential of homeopathic medicines in the treatment of cancer. In the homeopathic medicine treated cultures, hallmarks of apoptosis were evident including, cell shrinkage, chromatin condensation and DNA fragmentation.
63.	Homeopathic *Thuja* 30C ameliorates benzo(a)pyrene-induced DNA damage, stress and viability of perfused lung cells of mice in vitro.	Mice	*Thuja* 30C ameliorates BaP-induced toxicity, stress and DNA damage in perfused lung cells of mice and it apparently has no effect on normal lung cells.
64.	Dose-dependent effect of homoeopathic drug *Zinc sulphate* on plant growth using *Bacopa monnieri* as model system	Plant	It was observed that Homoeopathic drug (*Zinc sulphate*) exhibited growth promotion at higher potency (6X) and growth inhibition at lower potencies (1X to 5X) on *Bacopa monneiri*.
65.	A study of the effect of mother tincture of *Syzygium jambolanum* on metabolic disorders of Streptozotocin induced diabetic male albino rat	Plant	The homoeopathic mother tincture of *Syzygium jambolanum* has therapeutic effect on metabolic disorders and oxidative injuries in Streptozotocin induced diabetic male albino rats.
66.	Anti-rheumatoid and anti-oxidant activity of homeopathic *Guaiacum officinale* in an animal mode	Rats	It was observed that body weight, ankle and knee diameter, urinary parameters, glucosamine, calcium, creatinine, phosphate, serum ACP/ALP/Ca2+/CRE/PO4/ gamma-glutamyl transferase/Lipid peroxidation/Glutathione/Superoxide dismutase/Catalase, serum GGT, serum interleukins like IL-1b/CINC-1/ PGE2/TNF-a/IL-6, IL-12/IL-4/IL-6 levels were significantly affected leading to normalization of these parameters compared to control group, suggesting that homeopathic G. officinale possesses antirheumatic and anti-oxidant activity in experimental animal and these activities may be more significant in higher potencies.

Sl. No	Title	Model Article	Outcome (s)
67.	Effect of homeopathic *Lycopodium clavatum* on memory functions and cerebral blood flow in memory-impaired rats#	Rats	STZ (ICV) treated rats showed impairment in learning and memory along with reduced CBF. Lyc MT and 200 showed improvement in learning and memory. There was increased CBF in STZ (ICV) treated rats at all the potencies of Lyc studied. The study suggests that Lyc may be used as a drug of choice in condition of memory impairment due to its beneficial effect on CBF.
68.	DNA fragmentation and cell cycle arrest: a hallmark of apoptosis induced by *Ruta graveolens* in human colon cancer cells	*In-vitro*	Study demonstrates the anti-cancer effect of the 30C and MT of Ruta seen in colon cancer COLO-205 cells, is due to cell cycle arrest at G2/M phase and apoptosis by the mitochondrial mediated pathway. This study provides the possibility of a window of therapeutic opportunity for preferentially eliminating colon cancer cells with minimal damage to the surrounding normal tissue.

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3.4.3 Literary Research

The Council, under the literary research activity, brings out quality publications in the form of books, monographs, handouts etc. Prior to the era when computers and software repertories became widespread, Council updated different chapters of Kent's repertory from the Boericke's repertory to form a comprehensive document. Chapters on 'Mouth', 'Eye & Vision', 'Ear and Hearing', 'Larynx & Trachea, Respiration, Cough, Expectoration and Chest', etc. were completed in this period. Updating

homœopathic literature on the basis of present day findings, however, is an ongoing literary research activity of the Council.

There is an increasing demand for more accountability and transparency in the reporting of research findings and the sharing of research data through publicly accessible databases; and for the use of evidence in the development of policy[53]. CCRH has been regularly publishing its studies, initially in the series titled CCRH Quarterly Bulletin. In 2007, CCRH launched the Indian Journal of Research in Homœopathy (IJRH), which is a peer reviewed quarterly journal and is being developed on international lines. The journal publishes the research outcomes of studies conducted by the Council and encourages scientists across the country to publish their homœopathic research studies. It is the first peer-reviewed homœopathic research journal in Asia. The Council also publishes the CCRH News and Current Health Literature Awareness Services (CHLAS) on quarterly basis. The Council is in the process of digitization of old publications to be uploaded through the website of the Council.- to be deleted

Updating homoeopathic literature on the basis of present day findings is an ongoing literary research activity of the Council. Prior to the era when computers and software repertories became widespread, Council updated different chapters of Kent's repertory from the Boericke's repertory to form a comprehensive document. Chapters on 'Mouth', 'Eye & Vision', 'Ear and Hearing', 'Larynx & Trachea, Respiration, Cough, Expectoration and Chest', etc. were completed in this period.
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3.5 Road Ahead

The results of studies till now have been encouraging. Further priority areas of research need to be focused upon. The road ahead requires undertaking research in more areas with better research designs.

The following designs are being considered to draw the roadmap to clinical research in India[54,55]

- Well designed observational studies
- Clinical audit
- RCT — Placebo-controlled or Standard Practice or Pragmatic RCT in usual care

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[54]Witt C, Linde K. Clinical Research in Complementary and Integrative medicine: A practical training book. Elsevier Health Sciences 2011
[55]Jonas WB, Lwith GT. Towards standards of evidence for CAM research and Practice. In. Lewith GT, Jonas WB, Walach H. Clinical Research in Complementary Therapies: Principles, Problems and Solutions. Second edition; China, Elsevier: 2011.

- Comparison with standard therapy or usual care for which ethical issues of patient's safety are not hampered long-term follow up to assess recurrence
- Studies based on principles of Homœopathy like dose, potency, high vs. low potencies, Centesimal vs. 50 Millesimal potencies
- Cost-effectiveness studies
- Replication of studies already conducted.

In the field of basic research, studies on nano-science open vast avenues. Studies also need to be conducted on agro-Homœopathy and veterinary Homœopathy. Homœopathy in India is gradually progressing in these areas and similar such multi-disciplinary studies are being conducted.

The CCRH proposes to strengthen research activities by investing in high quality research for scientific validation and global acceptance, while utilization of the resource base in terms of expertise and modern technology in furthering scientific research and creating an enabling infrastructure for International recognition. The Council is also in the process to initiate research on some of the fundamental principles of Homœopathy, to validate them scientifically.

Being the apex research body for Homœopathy in India, CCRH needs to collaborate with national and international research bodies of Homœopathy to conduct studies which are replicable in different environments. All these activities would be possible only with the support of the various stakeholders including policy makers, academicians, educators, practitioners, researchers and students.

DRUG DEVELOPMENT AND REGULATION

Increase in the use of homeopathic medicines and rapid expansion of global market are associated with ensuring safety and quality of homeopathic medicines by the health authorities, pharmaceutical industries and consumers. Requirements and methods for the quality control of finished homeopathic medicines are far more complex than for chemical drugs, particularly for combined or mixed homeopathic medicines.

Source materials used in manufacture of homeopathic medicines consist of the following:

- *plant material such as:* roots, stems, leaves, flowers, bark, pollen, lichen, moss, ferns and algae;
- *microorganisms such as:* fungi, bacteria, viruses and plant parasites;
- *animal materials such as:* whole animals, animal organs, tissues, secretions, excretions, cell lines, toxins, blood products;
- *human materials such as:* tissues, secretions, cell lines and endogenous molecules such as hormones;
- *minerals and chemicals;*
- *imponderabilia.*

Two issues are decisive for quality of homœopathic preparations: determining the authenticity of source material according to homœopathic traditions and defining manufacturing process. In the recent years, WHO has identified guidelines for quality assurance of homœopathic drugs which can be adopted by the country's regulatory authorities and drug manufacturers[56].

Government of India has set up regulatory authorities for quality control and laying down standards of homœopathic medicines. The standards of homœopathic drugs are determined by the process of drug standardization. Homœopathic pathogenetic studies and clinical verification are other two processes in drug development.

4.1 HOMŒOPATHIC PHARMACOPOEIA COMMITTEE AND HOMŒOPATHIC PHARMACOPOEIA LABORATORY[57]

The Government of India constituted the Homœopathic Pharmacopoeia Committee (HPC) in 1962 to lay down principles and standards for the preparation of homœopathic drugs.

Homœopathic Pharmacopoeia Laboratory (HPL) was established in 1975 (Figure 21) with a vision to help the consumer to get quality homœopathic drugs. It is a central drug laboratory of homœopathic

[56]World Health Organization.Safety issues in the preparation of homeopathic medicines. WHO 2009 [cited 2012 September 1] Available at www.who.int/medicines/areas/traditional/Homeopathy.pdf

[57]Homoeopathic Pharmacopoeia Laboratory. New Delhi (IN): Ministry of Health and Family Welfare, Government of India [cited 2012 Sept 04]. Available from: http://hplism.nic.in

system of medicine. Laboratory plays a pivotal role in standardization of drugs and awareness regarding quality of homœopathic medicines.

It is a statutory laboratory for laying down standards and tests of homœopathic drugs, and also disseminates technical knowledge regarding homœopathic drugs. The Laboratory applies multi-disciplinary approach covering pharmacognostical, physicochemical, pharmocological, microbiological and homœopathic studies for fixation of standards in different sections of the laboratory.

The major activities of the HPL are:

- Laying down of standards for identity and purity of homœopathic drugs.
- Verification and updating of pharmacopoeial standards done for adoption of additional information and improvement of standards.
- Testing of samples of homœopathic drugs control authorities, port authorities, state government, etc. for identity and quality under different provisions of Drugs and Cosmetics Act and Rules.
- Survey and collection of samples of homœopathic drugs for verification of quality and adulteration trends of drugs marketed.
- Cultivation and introduction of medicinal plants. Maintenance of a medicinal plants garden with reference to plants used in Homœopathy.
- Survey and collection of medicinal plants.
- Maintenance of a reference herbarium and a museum.
- Imparting training to central government drugs authorities/state, drugs inspectors, drug analysts, pharmacists etc. on GMP, standardization and quality control of homœopathic drug.
- Act as central drug laboratory for homœopathic medicines for whole of India.
- Director of the laboratory performs function of a government analyst for state governments as and when desired by them.

The HPL has pharmacognosy, chemistry, microbiology, homœopathy sections. These sections are described in the following paragraphs:

Pharmacognosy Section

The Pharmacognosy section undertakes detailed pharmacognostic studies, which includes taxonomic identification of plants and its parts, Macro- and Microscopical details and histochemical analysis of the plant parts used in preparation of medicine is done. The laboratory conducts survey tours to different agroclimatic regions of India for collection of medicinal plants. The laboratory maintains a herbarium, where medicinal plants are preserved. Museum of laboratory has a huge collection of rare and exotic medicinal plants, used in Homœopathy. Regular addition of new samples in the museum is also the continuous process. Latest scientific techniques are used to preserve them.

The laboratory also maintains an experimental medicinal plants garden. Efforts are being made to have maximum species of medicinal plants of homœopathic importance so that biodiversity does not affect standardization. About 60% plants used in Homœopathy are of foreign origin, so different technical methods have been adopted to acclimatize them in the climatic condition of our country. Medicinal plants grown in herbal garden are also used in preparation of drugs and help in standardization process. This also serves the educational purpose of visitors like faculty members and students of different homœopathic medical colleges from all over India. Laboratory also conducts the seed exchange programme with different countries.

Chemistry Section

The chemistry section of laboratory (Figure 22) is equipped with many sophisticated instruments like Ultra Violet Spectrophotometer, Atomic Absorption Spectrophotometer, HPTLC, etc. and many modern analytical techniques are adopted for standardization of homœopathic drugs.

Microbiology Section

Methods of preparation of nosode have been given in the 4th volume of the Homœopathic Pharmacopoeia of India. Few monographs on nosodes are published in different volumes of Homœopathic Pharmacopoeia of India. Laboratory maintains a nosode bank which serves our demand and is also supplied to scientific institutions on demand.

- It performs the sterility test of ophthalmic preparation as per Schedule FF of Drugs and Cosmetics Act & Rules.
- Test for presence of pathogenic bacteria (MLT) for bio-chemic tablets and liquid orals are done.

Homœopathic Section

It helps in screening of formulation and preparation of monographs.

Library, Publications and Information Section

The library of laboratory has a good collection of books in the sphere of laboratory's mandate and subscribes scientific and technical journals.

Training Programme

The laboratory organizes training programme for drug inspectors / drug analysts as capacity building programme. In the past the laboratory organized training programmes for manufactures, principals of homœopathic medical colleges and medical officers of states. The students of various medical colleges of india also visit the laboratory to learn the homœopathic pharmacy. The Director of the laboratory is notified Government Analyst and laboratory also function as drug testing laboratory for the purpose of homœopathic drugs. Many state governments have also notified Director of the laboratory as Government Analyst. The laboratory receives samples for testing as per Drugs & Cosmetics Act & Rules from different agencies like Port, Different State Drug Enforcement

Authorities, CGHS, State Govt. Hospitals etc.

Publications

Worked out standards of homœopathic drugs by the laboratory are approved by HPC and incorporated as monographs in Homœopathic Pharmacopoeia of India (HPI). So far, 9 volumes of HPI have been published comprising of standards on 944 drugs and 263 standards on finished products. 10th volume of HPI is in the press. A consolidated volume containing all the monographs of Volume1st to Volume 9th is under progress. Apart from this, standards of 101 Homœopathic Drugs have been published in the form of Homœopathic Pharmaceutical Codex.

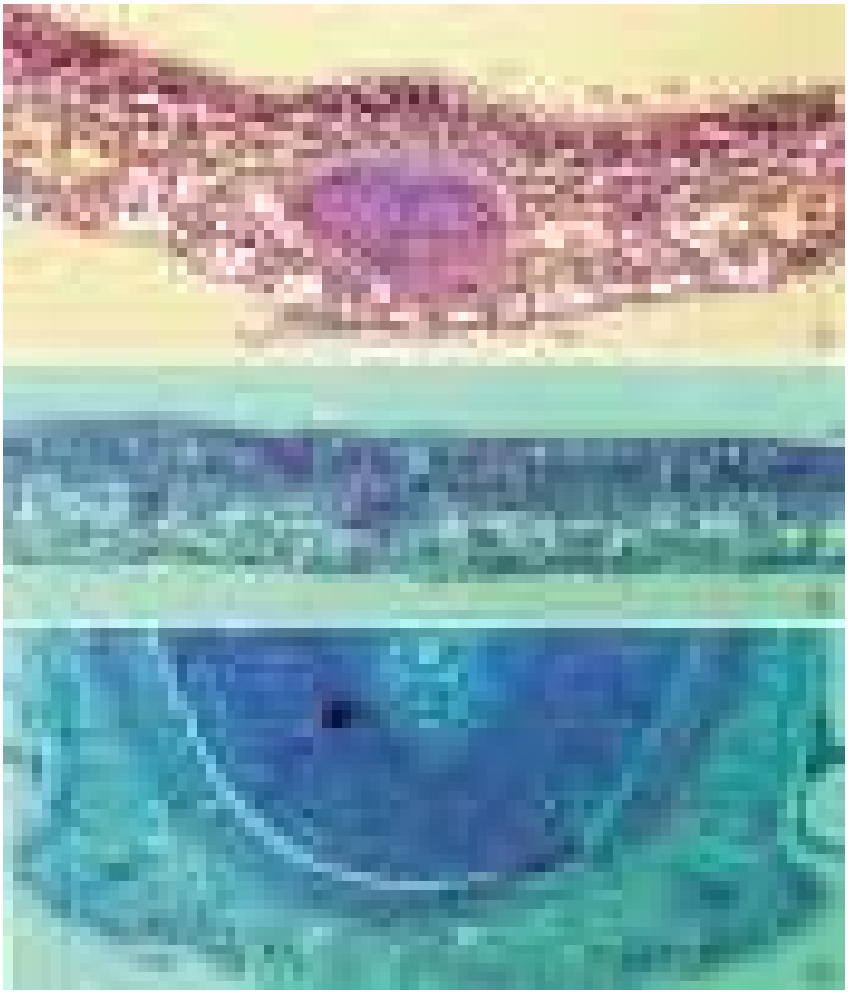
Figure 21: Homoeopathic Pharmacopoeia Laboratory, Ghaziabad

Figure 22: Chemistry laboratory at HPL, Ghaziabad

4. 2 DRUG STANDARDIZATION

Drug Standardization procedures establish pharmacognostic, physico-chemical, and pharmacological parameters of the drug substances. The pharmacognostical studies include the macro and microscopical characteristics of raw drugs of vegetable origin. The physico-chemical analysis helps to determine the physical and chemical properties of a drug. The pharmacological spectrum of a drug is ascertained through experimental trials on laboratory animals and includes evaluation of safety, drug action and preliminary estimation of dosage. The pharmacological studies are conducted in compliance with CPCSEA (Committee for the Purpose of Control and Supervision on Experiments on Animals) guidelines. The Council has undertaken pharmacognostical studies on 272 drugs, physico-chemical studies on 265 drugs and pharmacological studies on 131 drugs. One hundred and twenty(120) drugs have been studied in all three aspects. This profiling process is of high economic importance since it establishes the identity of the raw drug material and helps in laying down the standards of drugs for ensuring the quality of the product (Figure 23).

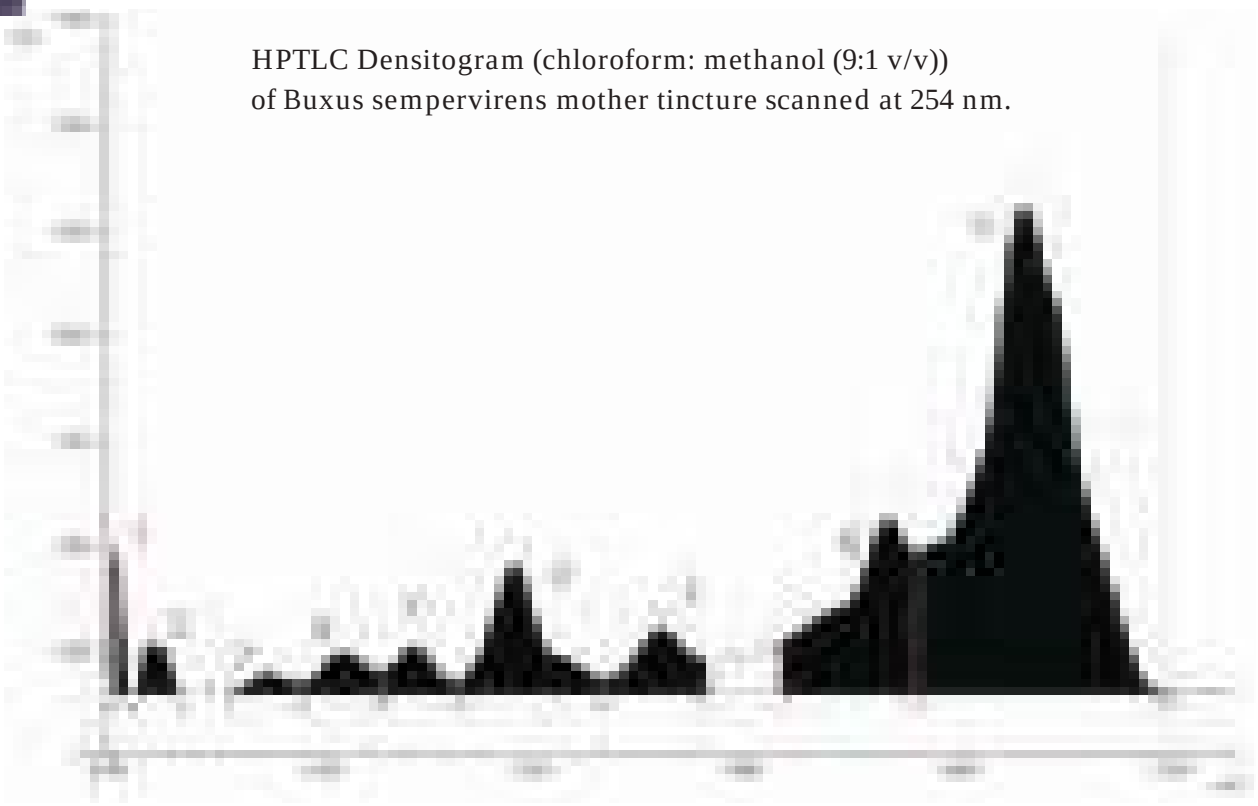
Figure 23: Standardization parameters of Buxus sempervirens

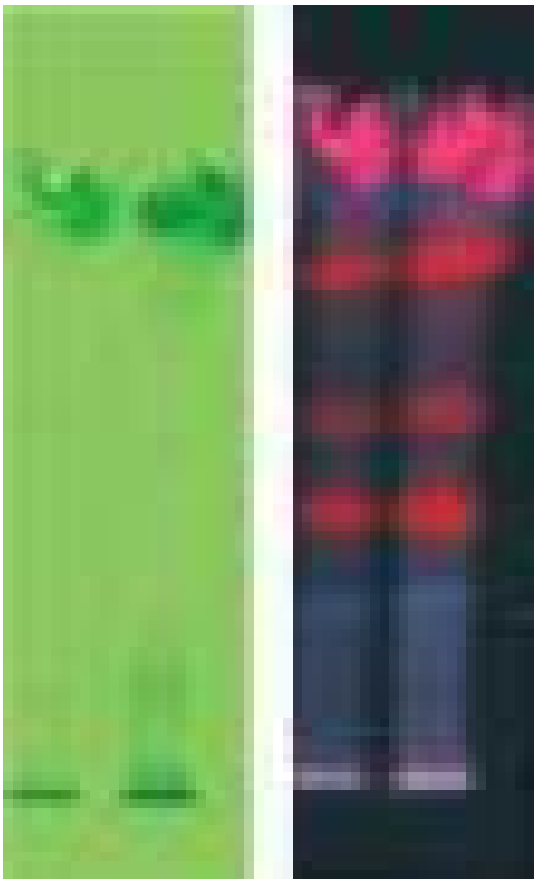


1. T.S. of leaf at midvein x 162
2. T.S. of leaf lamina x 132
3. T.S. of stem x 145

Abbreviations :
c - cuticle;
ue - upper epidermis;
le - lower epidermis;
p - palisade tissue;
vb - vascular bundle;
x - xylem;
ph - phloem;
cr - crystal;
sp - spongy tissue;
e - epidermis;
cb - cortical bundle;
pi - pith;
sc - secretory canal.

HPTLC Densitogram (chloroform: methanol (9:1 v/v))
of Buxus sempervirens mother tincture scanned at 254 nm.





254 nm 366 nm

HPTLC finger printing (chloroform: methanol (9:1 v/v)) of Buxus sempervirens mother tincture scanned at 254 nm and 366 nm.

Survey, Collection and Cultivation of Medicinal Plants:

Survey of Medicinal Plants and Collection Unit (SMPCU) of CCRH, established in 1979 is located at Emerald, Nilgiri District Tamil Nadu. It conducts survey, collection and cultivation of medicinal plants used in Homœopathy and supplies raw drug samples to the Central Research Institute (H), Noida and Drug Standardization Unit (H), Hyderabad for standardization studies. The Unit also cultivates exotic (71) (Figure 19) and indigenous (15) medicinal plants used in Homœopathy and maintains the garden, which is spread in 12.7 acres of land. Since inception SMPCU has collected and supplied 445 Homoeopathic medicinal raw plant drug to the units of the council and maintained a herbarium consisting of 9105 herbarium sheets of the collected plants during the tours.

Publications

A. Books Published:

1. Standardisation of Homoeopathic Drugs Vol. I
2. Standardisation of Homoeopathic Drugs Vol. II
3. Standardisation of Homoeopathic Drugs Vol. III
4. Standardisation of Homoeopathic Drugs Vol. IV
5. Identification of Homoeopathic Drugs of Plant Origin
6. A check list Homoeopathic Medicinal Plants of India
7. A hand book of Medicinal Plants used in Homoeopathy
8. Pharmacological action of Homoeopathic drugs
9. Plants in Ethnomedicine of the Nilgiri Tribes in Tamil Nadu, India
10. Vernacular names of plant drugs in Homoeopathic Pharmacopoeia of India

B. Monographs Published:

1. Abroma augusta
2. Acalypha indica
3. Aegle folia
4. Aegle marmelos
5. Alfalfa
6. Atista indica
7. Baryta iodatum
8. Boerhaavia diffusa
9. Carica papaya
10. Cassia fistula
11. Cassia sophera
12. Cynodon dactylon
13. Holarrhena antidysenterica
14. Hydrocotyle asiatica
15. Kali muriaticum
16. Ocimum canum
17. Terminalia chebula
18. Tylophora indica
19. Thea chinensis

C. Scientific Papers Published :

More than 170 scientific papers have been published in various reputed Journals at National and International levels.

4. 3 DRUG PROVING (HOMŒOPATHIC PATHOGENETIC TRIAL)

The challenge of finding a simple drug substance to treat complex diseases in a dynamic living system is incredible. The very foundation of Homœopathy is based on the action of drug substances on the living systems and therefore, the earliest experiments conducted in Homœopathy were those of Drug Proving. Trials conducted on healthy human beings elicit the finer symptoms of the drug as compared to the gross toxicological symptoms evident from animal studies. These more subtle subjective and objective symptoms form the profile of the drug recorded in the *Homœopathic Materia Medica.*

These studies are similar, but not identical to Phase 1 trials conducted in Allopathy. The latter also involve testing of the drug substance on healthy human volunteers. But the stark contrast between the two systems is highlighted here. On one hand, the Phase I trial is designed primarily to reduce the risk of serious (drug) toxicity and avoid confounding pharmacologic and adverse effects; and also to assess pharmacokinetics, whereas in Homœopathy, sub-material or ultra-molecular doses of potentially toxic or pathogenic substances commonly are used in homœopathic drug proving on healthy human beings to produce symptoms and so generate new indications for clinical use of the homœopathic medicine[58].

Drug provings have been an important activity of research in India. Various authorities in Homœopathy have proved drugs, native to India and drugs used by other Indian systems of medicine have been adopted in Homœopathy, following derivation of their symptomatology as per the Homœopathic Drug provings. 'Drugs of Hindoosthan' is a compilation of partially proved drugs and contains symptomatology of 50 drugs of Indian origin.

The focus of the CCRH's drug proving programme is on proving of fragmentarily proved drugs and indigenous drugs. Till now, the CCRH has methodically proved 98 drugs, out of which 76 drugs are of plant origin, 08 are of animal origin and 12 are prepared from chemicals. Out of these 98 drugs, 20 drugs of Indian origin are proved for the first time (Table 21).

The CCRH prepared a Drug Proving Protocol on double blind technique, taking positive leads from protocols followed by different international homœopathic organizations. The protocol was published in the British Homœopathic Journal[59]. The reproving of Tarentula hispanica[60] validated this

[58] Dantas Flávio. How can we get more reliable information from homoeopathic pathogenetic trials?: A critique of proving. British Homoeopathic Journal 1996; 85(4): 230-6.

protocol wherein about forty symptoms as mentioned in the original proving appeared in the reproving These were also verified clinically under the clinical verification programme[61]

Table 21 New drugs proved by the CCRH

1.	Asclepias curassavica
2.	Azathioprine
3.	Brassica oleracia
4.	Buxus sempervirens
5.	Cardiospermum halicacabum
6.	Cassia fistula
7.	Cassia sophera
8.	Curcuma longa
9.	Cuscuta reflexa
10.	Cyclosporine
11.	Cynara scolymus
12.	Foeniculumvulgare
13.	Glycyrrhiza glabra
14.	Persea americana
15.	Phyllantheus neruri

4. 4 CLINICAL VERIFICATION

Following compilation of the effects of drugs on healthy human beings, the clinical verification of homœopathic drugs implies actual application of these drugs on persons with disease so as to reiterate the similia principle of Homœopathy and to compile an evidence base of actual action of drug substance on individuals with diseases. This process amalgamates the basic principles of Homœopathy and builds upon the *Homœopathic Materia Medica.*

The drug development process in Homœopathy, therefore, moves from standardization of a drug substance to ascertaining its therapeutic potential followed by its verification in clinical settings.

[59]Nagpaul VM, Provings – planning & protocol. British Homoeopathic Journal.1987; 76(2):76-80
[60]Nagpaul VM, Dhawan IM, Vichitra AK, Rastogi DP; Tarentula Hispanica Reproving; British Homeopathic Journal, 1989; 78(1):19-26
[61]Khurana A. Reproving & clinical verification of pathogenesis of Tarentula hispanica. CCRH Quarterly Bulletin 1992; 14 (1&2)

Table 22 Drug development process

Drug Standardization	Homœopathic Pathogenetic Trial	Clinical Verification
Laboratory	Healthy human beings in controlled settings	Persons with diseases in clinical settings
Raw drug material collected from the nature under diverse settings	Direct action of drug on living system in health	Completes the symptom profiles of drugs
Involves profiling of drugs on Pharmacognostic, Physico-chemical and Pharmacological parameters	Evolves the symptomatic indications of the drugs	Therapeutic application of drug on sick persons

List of drugs of Indian origin whose drug standardization, homœopathic pathogenetic trials, clinical verification studies are completed by the CCRH are given in Table 23.

Table 23 List of drugs with complete studies by CCRH on drug standardization, drug proving and clinical verification

1. Abroma augusta
2. Acalypha indica
3. Aegle folia
4. Aegle marmelos
5. Amoora rohituka
6. Atista indica
7. Azadirachta indica
8. Boerhavia diffusa
9. Calotropis gigantea
10. Carica papaya
11. Cassia fistula
12. Cassia sophera
13. Caesalpinia bonducella
14. Cephalandra indica
15. Coleus aromaticus
16. Curcuma longa
17. Cynodon dactylon
18. Gymnema sylvestre
19. Holarrhena antidysenterica
20. Hydrocotyle asiatica
21. Hygrophila spinosa
22. Janosia asoca
23. Juglans regia
24. Mangifera indica
25. Ocimum canum
26. Terminalia arjuna
27. Terminalia chebula
28. Tribulus terrestris
29. Tylophora indica
30. Agave americana
31. Andrographis paniculata
32. Argemone mexicana
33. Bacopa monnieri
34. Chelone glabra
35. Clerodendron infortunatum
36. Cuprum oxydatum nigrum
37. Cornus circinata
38. Ficus religiosa
39. Formic Acid
40. Liatris spicata
41. Mimosa humilis
42. Ocimum sanctum
43. Parrafin
44. Pothos foetidus
45. Senega
46. Skookum chuck
47. Tinospora cordifolia
48. Thymol
49. Thyroidinum

The details of some of these drugs, along with their common names, botanical names and the clinical conditions verified are given as Figure 24 to 61.

4. 5 DRUG REGULATIONS AND QUALITY CONTROL

The Drugs and Cosmetics Act, 1940 & Rules, 1945

There exists a regulatory provision for Homœopathic Medicines in the Second Schedule under 4-A of the Drugs and Cosmetics Act, 1940. The definition of Homœopathic Medicines, prescribed under Rule 2(dd) of Drugs and Cosmetics Rules, 1945 is as follows:-

"Homœopathic medicines include any drug which is recorded in Homœopathic proving or therapeutic efficacy of which has been established through long clinical experience as recorded in authoritative Homœopathic literature of India and abroad and which is prepared according to the techniques of Homœopathic pharmacy and covers combination of ingredients of such Homœopathic medicines but does not include a medicine which is administered by parenteral route[62]*."*

The provisions under the above Act and Rules cover sale, manufacturing and quality control of homœopathic medicines. There exists a Drug Technical Advisory Board and Drug Consultative Committee. A Homœopathic Sub-Committee has also been set up under the above Board for looking after the sale and manufacture of homœopathic medicines exclusively.

Good Manufacturing Practices (GMP) :

Good manufacturing practice (GMP) guidelines covering manufacturing process, premises, personnel, packaging and labeling applied to homeopathic medicines have been notified for manufacturing of homœopathic medicines (Schedule M-1 of Drugs and Cosmetics Rules, 1945). It is mandatory for all homœopathic drug manufactures to comply with the GMP provisions and obtain GMP certification[63].

4. 6 DRUG MANUFACTURING INDUSTRY

The IBISWorld's Homoeopaths reveals a report on market research providing latest statistics in the Homoeopathic industry trends. It has unveiled the increasing interest of US populations in Homoeopathic healing methods especially in the aging population. The report showed double digit sale growth in the recent years estimated the increased percentage of the US adult population as a Homoeopathy users. In the five years to 2017, the industry will continue to grow coupled with rising per capital disposable income. Over the 10 years to 2018, Homoeopathic industry will add value, or its contribution to the economy is expected to grow at an annualized rate of 5.8%. This statistics of faster growth is found more than the projected growth for US GDP during the same period (2.1%), including the industry will make up a larger share of the economy in the recent years ahead. In the five years to 2013, IBISWorld estimated an increasing percentage of Americans using Homoeopathic services due to widened acceptance of its safety and efficacy, which further a sure spurred growth in the Homoeopathic industry[64].

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[62]The Drugs & Cosmetics Act & Rules. Ministry of Health and Family Welfare (Department of Health). New Delhi IN: Department of Health, Ministry of Health and Family Welfare 2005. Available from: http://cdsco.nic.in/html/copy%20of%201.%20d&cact121.pdf

[63]Central Drug Standard Control Organization. Schedule M. [cited 2012 Sept 1] Available at : http://cdsco.nic.in/html/gmp/schedulem%28gmp%29.pdf

[64]Homoeopaths in the US Industry: Market Research Report. IBISWorld [Internet] July 2012 © 1999-2012 [cited 2012 September 1] Available from: http://www.ibisworld.com/industry/homeopaths.html

The European Coalition for Homeopathic and Anthroposophical Medicinal Products (ECHAMP) in its publication 'Facts and Figures 2011' records that in 2010, for the third year in a row, sales of homeopathic and anthroposophic products exceeded €1 billion, valuing the total EU market for these products at €1. 035 billion in 2010. The sector represents only 0. 7% of the total turnover of the pharmaceutical industry, yet in fact, reaches a high number of European citizens due to low cost of the products and the fact that dosages to achieve a required therapeutic effect are often small in number. Manufacturers of these products are experiencing consistently high and increasing demand for these products from patients, doctors and homœopaths[65].

In the UK in 2008, it was estimated that 15% of the population of Britain trusts Homœopathy as a form of treatment. The over-the-counter market in Homœopathy currently stands at around £40million based on the last market figures published by Mintel, which estimated in 2007 that it was worth £38million but projected to reach £46million in 2012[66].

The Associated Chambers of Commerce and Industry (ASSOCHAM) of India in 2011 estimated the Homœopathy market globally to be Rs. 263 billion, with a growth rate of 25%. France was found to be the largest contributor. In India the domestic Homœopathy market size was estimated to be about Rs. 27. 58 billion, likely to grow 30% annually and reach a size of Rs. 46 billion by 2012[67]

The leading countries exporting homœopathic medicines are Germany, France and India. Currently, in India there are 319 drug manufacturing units. These companies in organized sector are, professionally managed and equipped with modern facilities and technology. India is exporting homœopathic products to a number of countries including Australia, New Zealand, Germany, Canada, Sri Lanka, Bangladesh, Oman, Malaysia, Pakistan, Singapore and Nepal.

GMP requirements are essential for export of medicines. The framework of the drug industry in India, therefore, identifies quality assurance through regulations and lays down the standards of homœopathic medicines followed by their publication and dissemination.

Pharmaceutical research offers a high potential for industry to collaborate with the research organizations, universities and institutes. Studies incorporating new substances, standardization, drug proving and clinical verification are a need of the hour for which the CCRH is in the process of exploring options and seeks collaboration and cooperation from the drug manufacturing industry.

Some exotic medicinal plants used commonly along with their botanical names, common names and few clinical conditions, where they are used most commonly are given in Figure 53 to 62.

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[65]European Coalition on Homeopathic and Anthroposophic Medicinal Products. Annual Report 2011 [Internet]. ECHAMP, Brussels [cited 2012 September 2]. Available from: http://www.echamp.eu/fileadmin/user_upload/Annual_Report/2011_-Annual_Report_v07.pdf

[66]British Homeopathic Association; Popularity and the Market Place. [Internet] [updated 2011 June 3; cited 2012 September 1]. Available from: http://www.britishhomeopathic.org/media_centre/facts_about_homeopathy/popularity_and_market_place.html

[67]Homeopathy Industry Likely to be Rs. 4,600 cr. by 2012: ASSOCHAM [press release]. India: ASSOCHAM 2011 March 18.

4.7 SOME MEDICINAL PLANTS USED IN HOMŒOPATHY WITH COMPLETE STUDIES BY CCRH ON DRUG STANDARDIZATION, DRUG PROVING AND CLINICAL VERIFICATION STUDIES

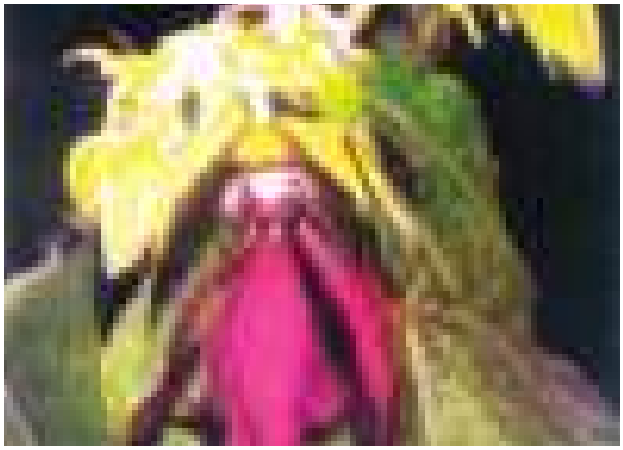

Figure 24 : Abroma augusta
Botanical name: *Abroma augustum* (L.) L.f.
Common names: English: Devil s cotton
Hindi: Kumal, Sanukapashi, Ulatkambal.
Clinical conditions verified: Anorexia, Arthritis, Constipation, Coryza, Cough, Diabetes mellitus, Dysmenorrhoea, Insomnia, Leucorrhoea, Metrorrhagia, Otorrhoea, Urinary tract infection.

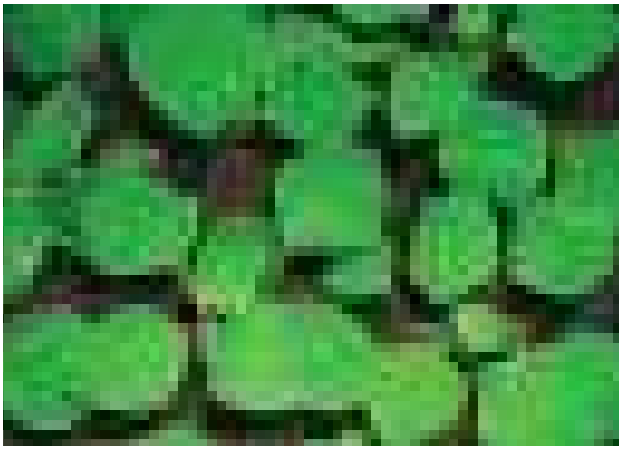

Figure 25 : Acalypha indica
Botanical name: *Acalypha indica* L.
Common names:
English: Indian nettle, Indian acalypha.
Hindi: Khokali, Kuppi, Kuppikhokli, Khokla, Khokli.
Clinical conditions verified: Arthritis, Aphthous ulcer, Backache, Boils, Constipation, Coryza, Cough, Dyspepsia, Fever, Glossitis, Headache, Haemoptysis, Haemorrhoids, Insomnia, Jaundice, Leucorrhoea, Nocturnal emission, Rash, Sore throat, Styes, Tinnitus, Toothache, Tuberculosis, Vertigo.

Figure 26 : Aegle folia & Aegle marmelos
Botanical name: *Aegle marmelos* (L.) Correa
Common names: English: Bengal quince, Bael, Holy Fruit Tree, Golden apple.
Hindi: Bel, Bael, Bilva, Sripal, Bel patri, Bel patra, Siphal, Sriphal.
Clinical conditions verified for Aegle folia: Diarrhoea, Dysentery, Dyspepsia.
Clinical conditions verified for Aegle marmelos: Coryza, Dysentery, Styes, Vertigo.

Figure 27 : Amoora rohituka
Botanical name: *Aphanamixis polystachya* (Wall.) Parker,
Common names:
English: Rohituka tree
Hindi: Harinhara, Harinkhana
Clinical conditions verified: Anorexia, Bleeding haemorrhoids, Constipation, Headache, Hepato-splenomegaly, Leucorrhoea, Nausea & vomiting, Vertigo.

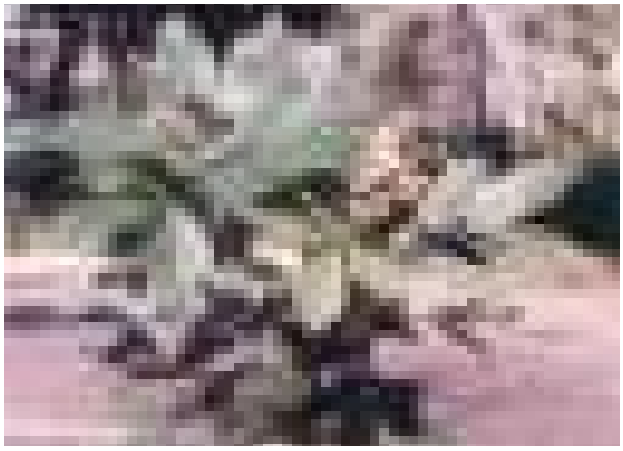

Figure 28 : Atista indica
Botanical name: *Glycosmis pentaphylla* (Retz.) Correa
Common name:
Hindi: Ban-nimbu
Clinical conditions verified: Constipation, Diarrhoea, Dysentery, Epistaxis, Hyperacidity, Leucorrhoea, Nocturnal enuresis, Tonsillitis, Toothache, Vomiting.

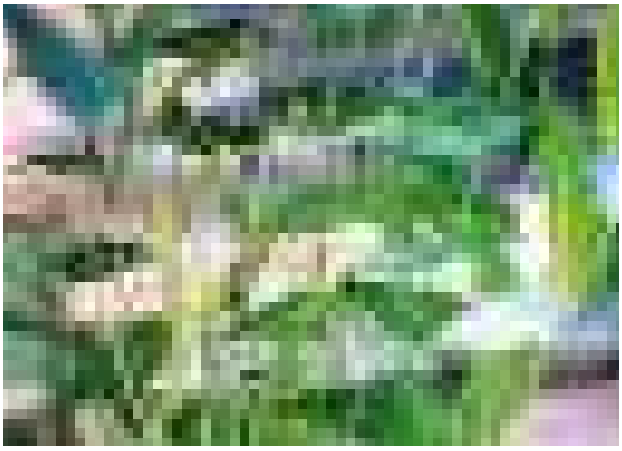

Figure 29 : Azadirachta indica
Botanical name: *Azadirachta indica* A. Juss.
Common name:
English: Indian lilac, Neem tree,Margosa.
Hindi: Nimb, Nim, Neem, Bakain.
Clinical conditions verified: Constipation, Coryza, Diarrhoea, Headache, Insomnia, Menorrhagia, Spermatorrhoea, Vertigo.

Figure 30 : Boerhavia diffusa
Botanical name: *Boerhavia diffusa* L.
Common names:
English: Spreading hog-weed.
Hindi: Beshakapore, Gadhaparna, Punarnava, Snathikari, Sant,Thikri.
Clinical conditions verified: Anorexia, Dropsy, Hypertension, Jaundice, Migraine, Oedema, Palpitation, Urinary tract infection, Vertigo.

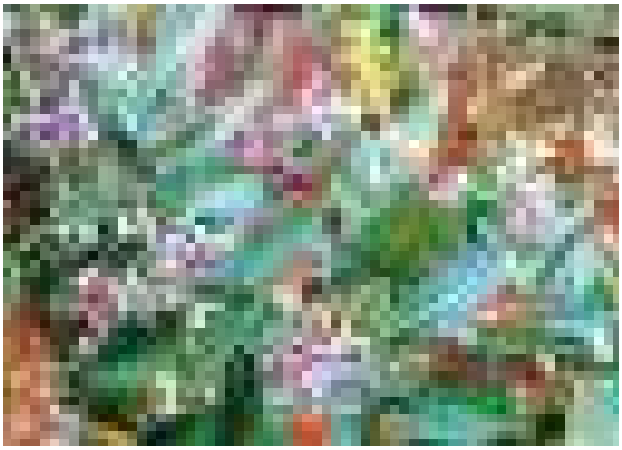

Figure 31 : Calotropis gigantea
Botanical name: *Calotropis gigantea* (L.) R.Br.
Common names:
English: Gigantic madder, Swallow-wort
Hindi: Madar, Akanda, Ark, Akond, Aak, Lalak, Lalmadar, Safedak.
Clinical conditions verified: Anorexia, Arthritis, Backache, Conjunctivitis, Constipation, Headache, Ringworm, Sore throat, Tonsillitis.

Figure 32 : Carica papaya
Botanical name: *Carica papaya* L.
Common names:
English:Papaya,Papaw.
Hindi:Papeeta, Popaiyah, Arandkharbuza, Papita.
Clinical conditions verified: Backache, Conjunctivitis, Constipation, Coryza, Cough, Depression, Difficulty in concentration, Dyspepsia, Fever, Headache, Sore throat, Toothache, Urinary tract infection, Vertigo.

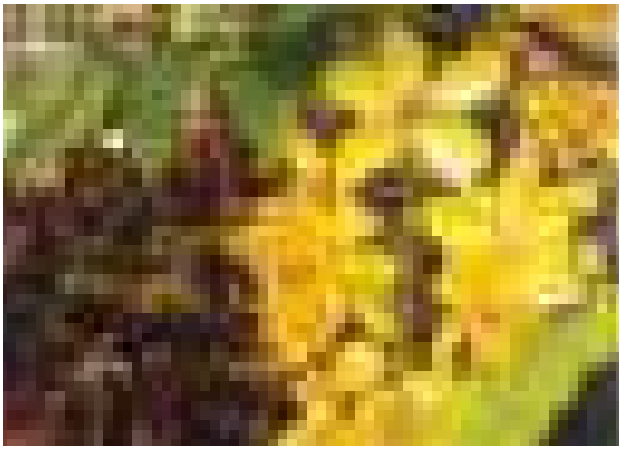

Figure 33 : Cassia fistula
Botanical name: *Cassia fistula* L.
Common names:
English: Golden shower tree, Indian Laburnum.
Hindi: Amaltas.
Clinical conditions verified: Anorexia, Arthritis, Constipation, Coryza, Headache, Hoarseness of voice, Orchitis.

Figure 34 : Cassia sophera
Botanical name: *Cassia sophera* L.
Common names:
English: Pepper leaves senna
Hindi: Banar, Kasondi, Kasunda, Bas-ki- Kasunda, Baskikasondi.
Clinical conditions verified: Arthritis, Asthma, Constipation, Laryngitis, Leucorrhoea, Nasal obstruction, Urticaria, Vertigo.

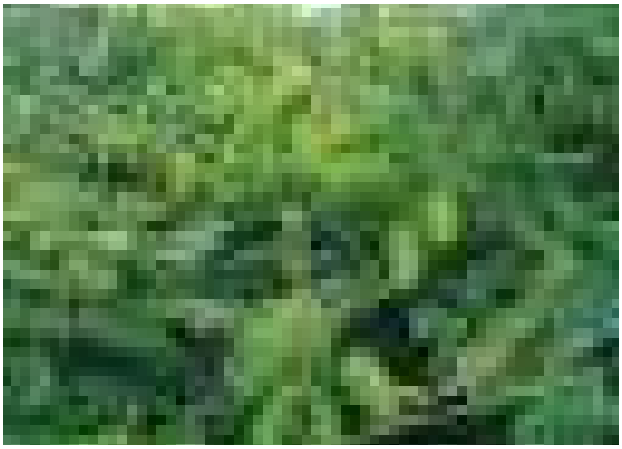

Figure 35 : Caesalpinia bonducella
Botanical name: *Caesalpinia bonduc (L.) Roxb.,*
Common names:
English: Fever nut, Bonducella nut, Nicker bean
Hindi: Karanju, Kat-karanj, Katklija.
Clinical conditions verified: Constipation, Coryza, Fever, Hepatomegaly.

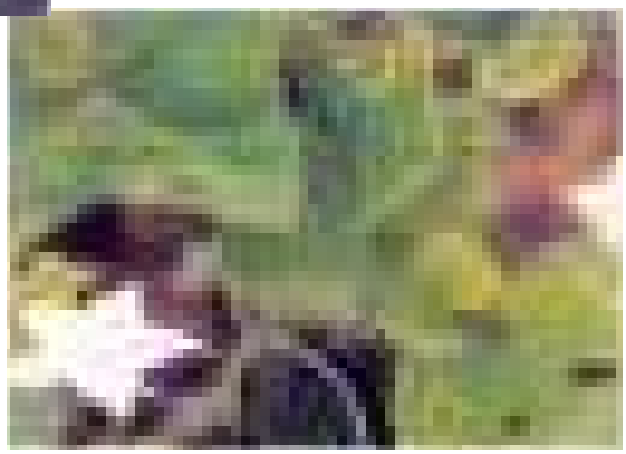

Figure 36 : Coccinia grandis (L.)
Botanical name: *Coccinia grandis* (L.) Voigt
Common names:
English: Ivy gourd
Hindi: Kunduri, Bhimb, Kanduri-ki-bel, Kanduri.
Clinical conditions verified: Diabetes mellitus, Diarrhoea, Flatulence, Rhinitis, Vertigo.

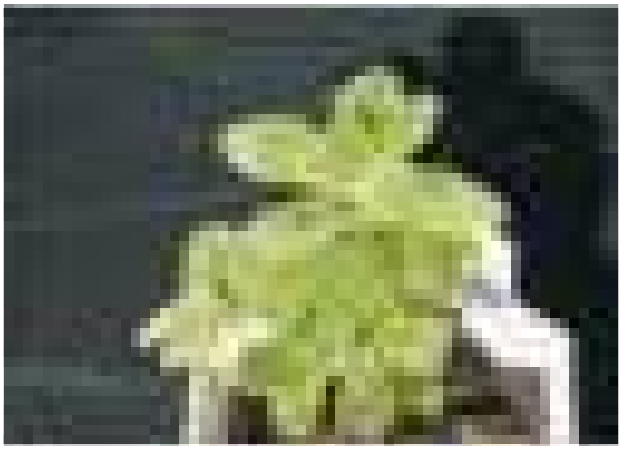

Figure 37 : Plectranthus amboinicus (Lour.)
Botanical name: *Plectranthus amboinicus (Lour.)* Spreng. ,
Common names:
English: Indian borage
Hindi: Patharchur, Patherchur, Pathorchur, Patta ajavauin.
Clinical conditions verified: Dysentery, Indigestion, Piles.

Figure 38 : Curcuma longa
Botanical name: *Curcuma longa* L.
Common names:
English: Turmeric.
Hindi: Haldi,Halda.
Clinical conditions verified: Arthritis, Conjunctivitis, Cough, Dyspepsia, Headache, Toothache, Urinary tract infection, Vertigo.

Figure 39 : Cynodon dactylon
Botanical name: *Cynodon dactylon* (L.)Pers.
Common names:
English: Dhub grass, Bermuda grass, Bahama grass.
Hindi: Doorba, Dhub, Dub, Dubra, Kalighas, Khabbal.
Clinical conditions verified: Abdominal pain, Acidity, Anaemia, Backache, Conjunctivitis, Constipation, Coryza, Cough, Diarrhea, Dysentery, Dysmenorrhoea, Dyspnoea, Epistaxis, Fever, Flatulence, Furuncles, Headache, Haematuria, Haemoptysis, Itching eruption, Leucorrhoea, Nocturnal enuresis, Pharyngitis, Piles, Renal calculi, Urinary tract infection, Vertigo, Vomiting, Worm infestation.

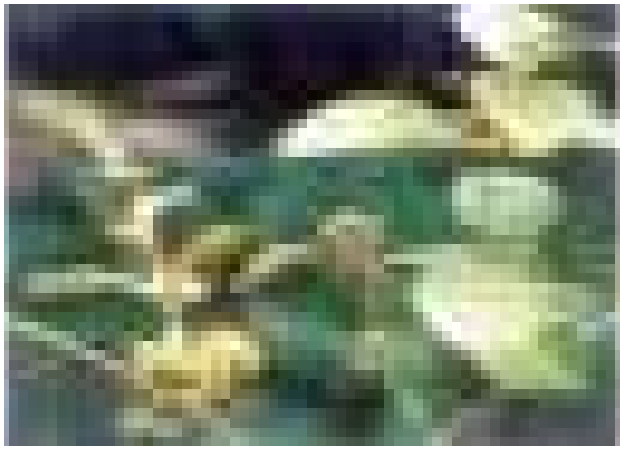

Figure 40 : Gymnema sylvestre
Botanical name: *Gymnema sylvestre* (Retz) R.Br. ex. Schult.
Common names:
English: Periploca of the woods, small Indian ipecacuanha.
Hindi: Gur-mar, Merasingi,Meshasringi.
Clinical conditions verified: Arthralgia, Boils, Diabetes mellitus, General debility, Leucorrhoea, Pruritus vulvae, Urethritis, Vertigo.

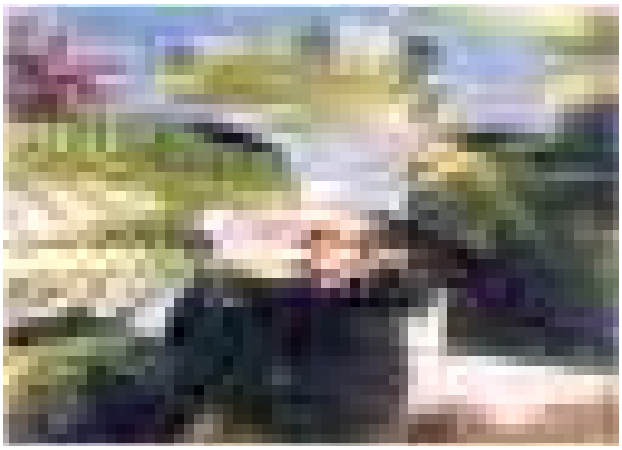

Figure 41 : Holarrhena antidysenterica
Botanical name: *Holarrhena pubescens* (Buch.-Ham.) Wall. ex G. Don.
Common names:
English: Conessi bark, Tellichery bark.
Hindi: Kurchi, Kura, Karchi.
Clinical conditions verified: Abdominal colic, Arthritis, Constipation, Coryza, Diarrhea, Dermatitis, Dyspepsia, Dysentery, Epistaxis, Excessive sweating, Fever, Forgetfulness, Headache, Insomnia. Stomatitis, Vertigo.

Figure 42 : Hydrocotyle asiatica
Botanical name: *Centella asiatica* (L.) Urban
Common names:
English: Indian pennywort ,Centella.
Hindi: Brahma manduki, Khulakhudi, Brahmibuti.
Clinical conditions verified: Acne, Anorexia, Arthritis, Backache, Dandruff, Dropsy, Dyspnoea, Eczema, Laryngitis, Psoriasis, Ringworm, Scabies, Urticaria.

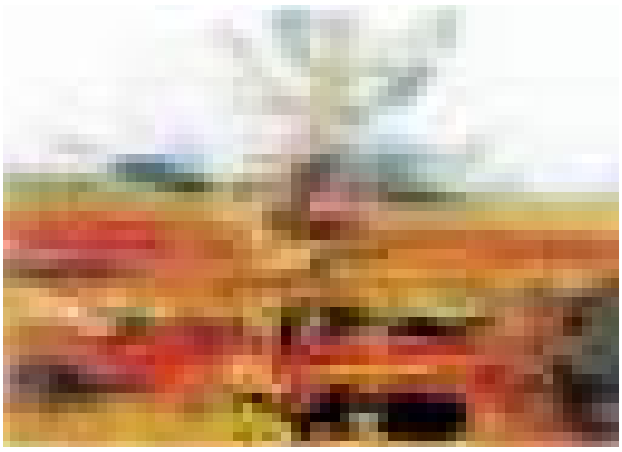

Figure 43 : Hygrophila spinosa
Botanical name: *Hygrophila schulli* (Ham.)M.R. & S.M.,
Common names:
Hindi: Gokshura, Talmakhana, Gokkhula-kanta, Kolsekajhar.
Clinical conditions verified: Abdominal colic, Cholelithiasis, Constipation, Insomnia, Pimples, Urticaria, Urinary tract infection.

Figure 44 : Janosia asoca
Botanical name: *Saraca asoca* (Roxb.) De Wilde.
Common names:
English: Asoka tree.
Hindi: Ashok, Asok, Anganapriya.
Clinical conditions verified: Acidity, Acne, Amenorrhoea, Anorexia, Dysmenorrhoea, Fever, Hemorrhoids, Insomnia, Laryngitis, Palpitation, Prolapsed uterus, Stye, Toothache, Tonsillitis, Urinary tract infection.

Figure 45 : Juglans regia
Botanical name: *Juglans regia* L.
Common names:
English:Walnut
Hindi: Akharot, Akhroot, Akor, Khor.
Clinical condition verified: Acne, Boils, Constipation, Headache, Indigestion, Stye, Toothache, Urticaria.

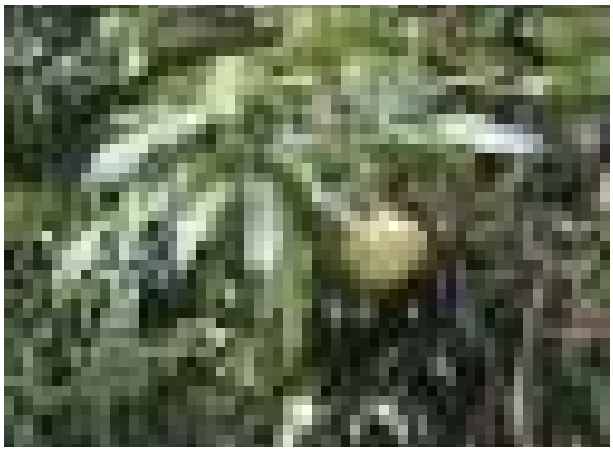

Figure 46 : Mangifera indica
Botanical Name: *Mangifera indica* L.
Common names:
English: Mango Tree
Hindi: Aam, Amba, Kairi.
Clinical condition Verified: Anorexia, Aphthous ulcer, Arthritis, Coryza, Epistaxis, Forgetfulness, Glossitis, Headache, Haemorrhoids, Insomnia, Sore throat, Tonsillitis, Toothache, Varicose veins, Vertigo.

Figure 47 : Ocimum canum
Botanical name: *Ocimum americanum* L.
Common names:
English: Hoary basil, Rosary.
Hindi: Kali tulsi, Mamri.
Clinical conditions verified: Anxiety, Backache, Boils, Constipation, Coryza, Cough, Diarrhea, Difficulty in concentration, Dyspepsia, Eczema, Headache, Herpes, Leucorrhoea, Mastitis, Orchitis, Prolapsed vagina, Remittent fever, Sore throat, Toothache, Urinary tract infection, Vertigo.

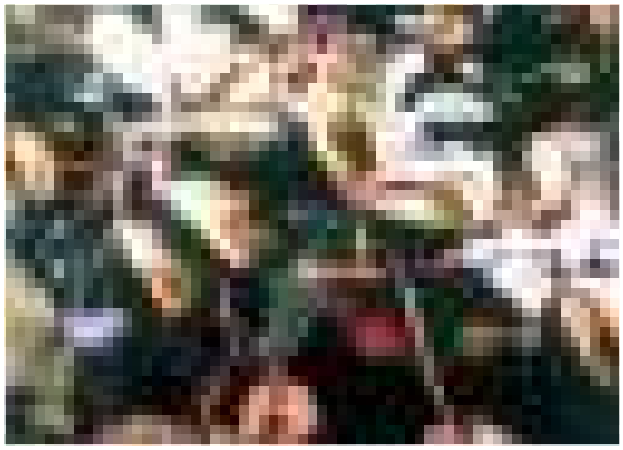

Figure 48 : Terminalia arjuna
Botanical name: *Terminalia arjuna* (Roxb.) Wt.& Arn.
Common names:
English: White Marudah, Arjun.
Hindi: Arjuna, Anjan, Jamla, Kahu, Kahua, Kowa.
Clinical conditions verified: Angina, Boils, Cough, Dyspnoea, Headache, Palpitation, Tinnitus, Vertigo.

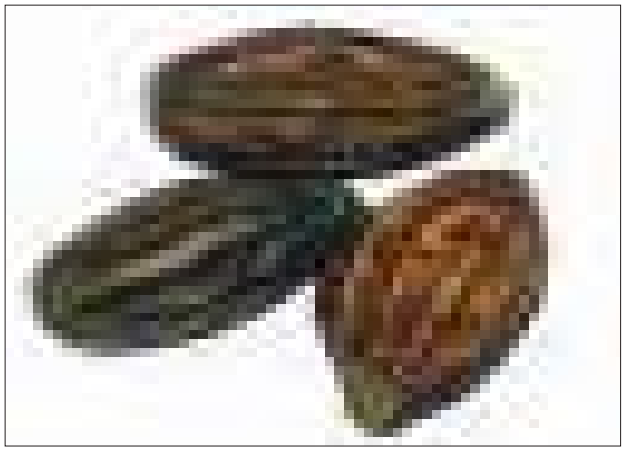

Figure 49 : Terminalia chebula
Botanical name: *Terminalia chebula* Retz.
Common names:
English: Yellow Myrobalan, Chebulic Myrobalan
Hindi: Harad, Harada, Harar, Pile-har.
Clinical conditions verified: Bleeding piles, Constipation, Dyspepsia.

Figure 50 : Tribulus terrestris
Botanical name: *Tribulus terrestris* L.
Common names:
English: Small calotrops, Land calotrops, Puncture vine.
Hindi: Gokhru, Chhotagokharu, Burragokhur.
Clinical conditions verified: Anorexia, Arthritis, Coryza, Cough, Dysentery, Dyspnoea, Fever, Headache, Itching eruptions, Sore throat, Tonsillitis, Urinary tract infection, Vertigo.

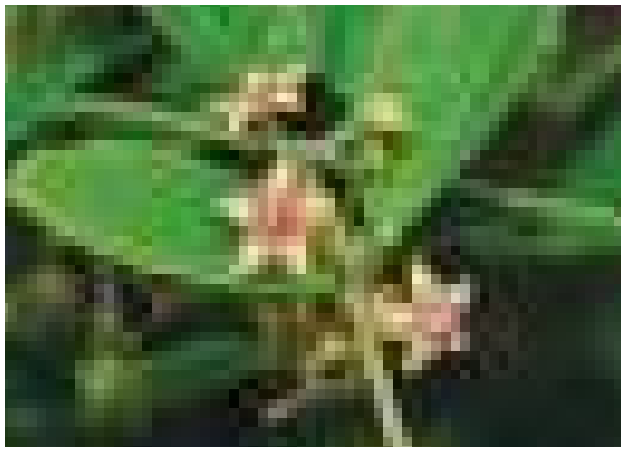

Figure 51 : Tylophora indica
Botanical name: *Tylophora indica* (Burm. f.) Merrill
Common names:
English: Indian ipecac, Indian ipecacuanha, Emetic swallow-wort.
Hindi: Antamul, Jangli pikvam, Jangali-pikvan.
Clinical conditions verified: Catarrh, Constipation, Cough, Diarrhoea, Dyspnoea, Flatulence, Headache, Myalgia, Pain in abdomen, Piles, Sore throat, Tinnitus, Urinary tract infection, Vertigo.

COMMON EXOTIC MEDICINAL PLANTS USED IN HOMOEOPATHY

Figure 52 : Aconitum napellus
Botanical name: *Aconitum napellus* L.
Common names:
English: Aconite, Monkshood, Wolfsbane
Clinical uses: Amenorrhoea, Cough, Fever, Influenza.

Figure 53 : Bryonia alba
Botanical name: *Bryonia alba* L.
Common names:
English: Black-berried bryony, Wild hop
Clinical uses: Constipation, Cough, Headache, Rheumatism, Vertigo.

Figure 54 : Calendula officinalis
Botanical name: *Calendula officinalis* L.
Common names:
English: Calendula, Garden marigold
Hindi: Zerzul
Clinical uses: Coryza, Deafness, Endocervicitis, Menorrhagia, Open wounds, Ulcers after injury.

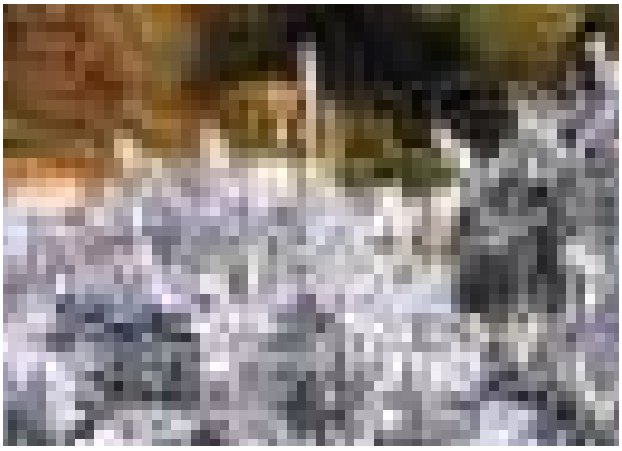

Figure 55 : Cineraria maritima
Botanical name: *Senecio bicolor* (Willd.) Tod. ssp. *cineraria* (DC.) Chater
Common names:
English: Cineraria, Dusty miller
Clinical uses: Cataract and corneal opacities.

Figure 56 : Digitalis purpurea
Botanical name: *Digitalis purpurea* L.
Common names:
English: Fox glove, Purple fox glove
Clinical uses: Hypertension, Hypertrophy and valvular diseases of heart, Jaundice, Rheumatism.

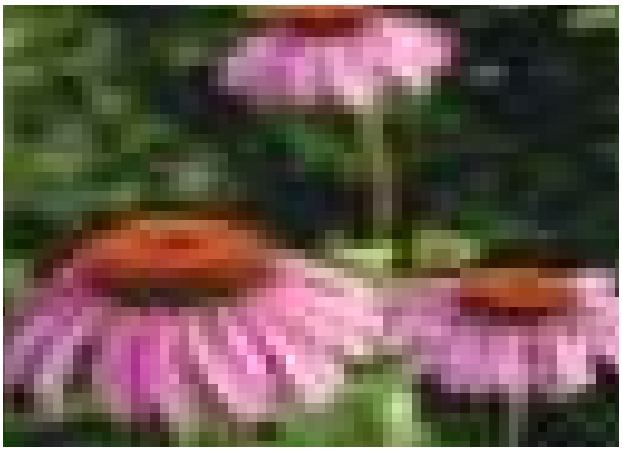

Figure 57 : Echinacea purpurea
Botanical name: *Echinacea purpurea* (L.) Moench
Common names:
English: Purple corn flower
Clinical uses: Acidity, Blood poisoning, Boils, Diarrhoea, Goitre, Headache, Septic conditions.

Figure 58 : Lycopodium clavatum
Botanical name: *Lycopodium clavatum* L.
Common names:
English: Club moss, Wolf's claw
Clinical uses: Constipation, Catarrh, Dyspepsia, Impotency, Malnutrition, Pneumonia.

Figure 59 : Rhus toxicodendron
Botanical name: *Rhus toxicodendron* L.
Common names:
English: Poison ash, Poison ivy, Poison vine
Clinical uses: Backache, Dermatitis, Diarrhoea, Headache, Influenza, Rheumatism, Sciatica, Urticaria. Vertigo.

Figure 60 : Ruta graveolens
Botanical name: *Ruta graveolens* L.
Common names:
English: Bitter herb, Garden rue, Rue
Clinical uses: Constipation, Periosteal troubles, Rectal prolapse, Sciatica, Sprain, Visual disturbances, Warts.

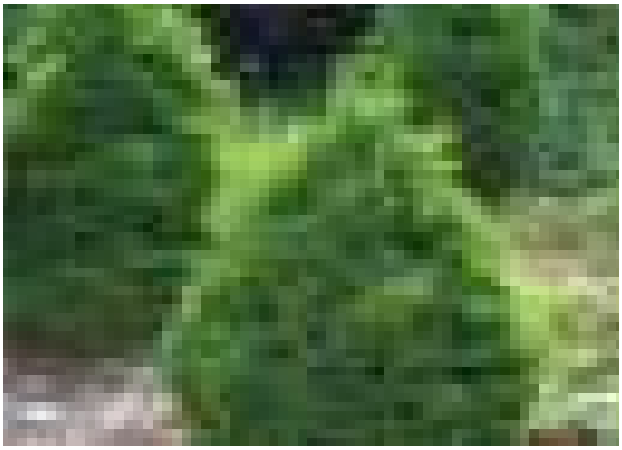

Figure 61 : Thuja occidentalis
Botanical name: *Thuja occidentalis* L.
Common names:
English: American arbor-vitae, White cedar, Tree of life
Clinical uses: Asthma, Chronic otitis media, Insomnia, Migraine, Rheumatism, Tumour, Urinary tract infection, Warts.

EDUCATION AND PRACTICE

5.1 EDUCATION

Education in Homœopathy aims to enable graduates to develop as independent and competent public health providers, to work in a variety of roles ranging from private practice to being an integrated member of a team of healthcare practitioners working in large scale clinical setting. Whereas India has adopted an organized university level education system, at par with corresponding conventional and other Indian medicine systems in the country, most other countries in the world are still to adopt independent educational courses.

The education system in many countries is well regulated and practitioners are trained medical practitioners. International Homœopathic associations such as LMHI, British Homeopathic Association (BHA), European Committee for Homeopathy (ECH) and several others in respective countries facilitate practice, learning, education and research. The standards of education and practice have been defined; e.g., ECH Homœopathic Medical Education Standards and accredited diploma courses are conducted by the LMHI. There is wide variation in educational standards and syllabi in different regions.

Homœopathy is taught as a specialization subject after the medical degree in modern medicine in some European and South American countries (the United Kingdom, France, Hungary, Spain, Ireland, Brazil, Cuba, Argentina, Columbia, Costa Rica,); in South Africa, it is provided as a diploma to medical doctors. In Germany, the Netherlands, Russia, Ukraine, New Zealand and the US, it is also taught independently along with other CAM therapies.

In addition, optional familiarization courses on Homœopathy are provided in the medical undergraduate curriculum as a part of a course on Complementary and Alternative Medicine in France, Germany, Hungary, Italy, the Netherlands, Romania, Spain, Switzerland and the United Kingdom. Postgraduate training courses in Homœopathy for doctors are provided at universities in Bulgaria, France, Germany, Greece, Italy, Lithuania, Poland, Romania and Spain. Homeopathy is an official part of the continuous education program for doctors in

Hungary and Romania. A professorial chair of CAM including Homœopathy exists in Hungary and Switzerland[68].

In Asian countries like India, Pakistan, Bangladesh, Nepal, Malaysia, independent colleges exist where Homœopathy is taught. Indian education is well recognized the world over as many Indian doctors teach homœopathic prescribing in different countries, but there is no university-level interaction except for reservation of certain seats for foreign students in Indian universities.

In the past few years, e-education has gained momentum and e-education courses and modules are available online. As of now, there are no checks on the quality of these courses. However, this has a high potential of becoming a mode of learning and up-gradation of knowledge in the future.

In India, organized education in Homœopathy began in the pre-independence period, beginning in Calcutta with the establishment of first homœopathic college, 'Calcutta Homœopathic Medical College' in 1883. Subsequent to the passing of the Central Council bill in both the houses of the parliament, the then President of India gave his assent to the Homœopathy Central Council Act 1973 on 19th December 1973. As per the provisions of the Act, the Government constituted the Central Council of Homœopathy (CCH) to regulate education and practice of the system.

Following courses for homœopathic education are available in the country:

BHMS Course: The Bachelor of Homœopathic Medicine and Surgery (BHMS) is presently the basic educational qualification in Homœopathy. It is a regular full-time 5 ½ years graduate medical degree (including one year of compulsory internship training). The students are imparted training and teaching in pre-clinical, para-clinical and clinical subjects.

Post Graduate Degree Course: In 1989, the Homœopathy (Post Graduate Degree Course), Regulations were notified, through which post graduation was made available in 3 specialty subjects. In 2001, four new specialty subjects were included. Physicians with a basic graduate

[68]European Committee for Homeopathy. Current Regulatory Status. [Internet]. [cited 2012 September 20]. Available from: http://www.homeopathyeurope.org/regulatory-status.

homœopathic degree can opt for Doctor of Medicine (Homœopathy) with options for specialization in the following subjects: Practice of Medicine, Pediatrics, Psychiatry, Homœopathic Pharmacy, Organon of Medicine & Homœopathic Philosophy, Materia Medica and Repertory.

Post-doctoral research programs (Ph. D.) in Homœopathy have been initiated by some universities.

5. 2 EDUCATIONAL INSTITUTIONS

Currently, there are 187 undergraduate colleges (admission capacity 13088) and 42 post graduation medical colleges in India for Homœopathy[25]. Out of 187 undergraduate colleges, 1 is national institute, approximately 29 are run by the state governments and 158 colleges are run by private bodies . Of the 42 post graduate colleges 2 are exclusive PG colleges.

Education in Homœopathy aims to enable graduates to develop competence in public health, to work in a variety of roles, ranging from private practice to being integrated members of a team of healthcare practitioners working in large scale clinical setting.

Homœopathy (Minimum Standards of Education) Regulations, 1983, as amended up to 2002, ensure that the colleges fulfill minimum requirements as laid down by CCH and maintain the quality of education in Homœopathy. Every college must be attached to a teaching hospital. The standards for staff, equipment, accommodation and training have further been laid down. The colleges must have 12 teaching departments:

(1) Anatomy
(2) Physiology & Biochemistry
(3) Homœopathic Pharmacy
(4) Pathology & Microbiology
(5) Community Medicine
(6) Forensic Medicine and Toxicology
(7) Practice of Medicine
(8) Surgery
(9) Gynecology and Obstetrics
(10) Materia Medica
(11) Organon of Medicine
(12) Repertory

The standards have a provision of providing fully equipped OPDs in the teaching hospitals

having examination rooms, case demonstration rooms, dispensing outlets, dressing room, facility for minor surgery, audiometry, supported by clinical laboratory, radiology unit, physical medicine and rehabilitation, etc. The teaching hospitals are also expected to provide Child Guidance Clinics, Antenatal clinics, Family Welfare clinics, OPDs for skin and Sexually Transmitted Diseases, Psychiatry OPD, etc. There is also a provision for indoor facility (IPD) for clinical teaching purposes which is as under:

A.	Medicine ward:		
	1.	General Medicine	- 50%
	2.	Paediatrics	- 10%
B.	Surgery ward		- 20%
C.	Obstetrics and Gynaecology ward		- 20%

The education in Homœopathy aims at sharpening the clinical skills of the students through adequate clinical exposure for precision in diagnosis of various conditions and selection of correct medicine indicated in each condition. The students are acquainted with various diagnostic techniques and supportive methodologies required for appropriate patient care. The students are also trained for various research methodologies in order to develop in them an aptitude for scientific research. However, most importantly, efforts are made to inculcate a sense of duty in the students for serving the community through their profession of healing.

Academic institutions are financially assisted by the Central Government through various schemes to improve and maintain the quality of education. Some of these schemes are:

- Infrastructural grant for development of under-graduate colleges
- Assistance to post-graduation institutions
- Up-gradation of academic institutes to state model colleges
- Continuing medical education for teachers and practitioners
- Renovation & strengthening of hospital wards of government/government- aided teaching hospitals
- Establishment of computer laboratories in colleges

Organising educational seminars and continuing medical education programmes under the various schemes is a regular feature of these institutes. Various research projects are also carried out in the academic institutions.

The Ministry of AYUSH has actively taken steps to bring about continuous improvement in the quality of education in colleges. The Central Council of Homœopathy conducts regular inspections of the colleges to ensure compliance to minimum standards of education. In 2012, the Regulations for Post Graduate Education in Homœopathy were amended to incorporate minimum requirements.

5. 3 NATIONAL INSTITUTE OF HOMŒOPATHY[69]

The Government of India established the National Institute of Homœopathy as a model teaching and research institute to promote the growth and all-round development of Homœopathy (Figure 62). The institute is affiliated to the West Bengal University of Health Sciences, Kolkata and conducts Undergraduate (UG) and Postgraduate (PG) courses.

Figure 62 National Institute of Homœopathy, Kolkata

[69] National Institute of Homoeopathy [Internet]. Kolkata(IN) National Institute of Homoeopathy [Updated 2015 , cited 2015 15 June] Available at: http://nih.nic.in

Aims & Objectives:

i. Promote growth and development of Homœopathy
ii. Produce graduates and post graduates
iii. Conduct research on various aspects
iv. Provide and assist in providing services and facilities for research, evaluation, training, consultation and guidance
v. Conduct experiments and develop patterns of teaching in undergraduate and post-graduate education
vi. Impart medical care through Homœopathy to the suffering humanity through outpatient and inpatient services

The main campus of the Institute is housed in a plot measuring 16.5 acres of land. The Academic building/ Administrative block, Hospital and UG hostels are located in this block. There are two other campuses; one measuring 9.5 acres of land for Residential Quarters for the staff of the Institute in JC-Block, Salt Lake and the other is the Medicinal Plant Garden on 25 acres of land situated at Kalyani, Dist. Nadia, West Bengal which is 60 kms away from the main campus. Total land available with NIH is 51 acres. The hospital has got 100 beds for in-patient department and a spacious OPD block, dispensing rooms, laboratory medicine department and a research wing which is being a expanded to provide 250 beds. The boy's hostel and girl's hostels for the UG students are housed in the academic complex and the PG hostel, international hostel and staff quarters are at JC block. The Library & Information Services division has more than 20392documents including rare Homœopathy treatises.

During 2014, Approximately 288051 patients attended the OPDs, 7126 patients were admitted in the IPD and 4720 patients were treated in the peripheral OPDs.

The admission capacity in the UG course is 93 and in the PG course, 36 per year. Of the 93 seats in UG, 14 seats are reserved for nominated candidates of States and Union Territories where there are no homœopathic medical colleges. Apart from these, the institute also provides admission to 10 Sri Lankan students each year nominated by the Government of Sri Lanka, admission to 5 candidates of Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) are from other countries. The remaining seats are filled through an all-India entrance examination conducted by the Institute. PG specialization is available in six subjects, viz. Practice of Medicine, Pediatrics, Psychiatry, Organon of Medicine & Homœopathic Philosophy, Materia Medica and Repertory. The admissions are made through an All India entrance examination conducted by the University.

Organizing educational seminars, re-orientation training programmes and continuing medical education programmes are a regular feature of the institute. In addition to research undertaken during MD courses by the students, the sate of art clinical research have been carried out in thyroid disorders, psoriasis, spondylosis, allergic rhinitis and cancers, etc. through homœopathic medicines by the institute.

5. 4 CENTRAL COUNCIL OF HOMŒOPATHY[70]

The Central Council of Homoeopathy (CCH) maintains a Central Register of Homœopathy and:

- Lays down minimum standards of education
- Recommends recognition of new colleges, new courses, increase in intake capacity of the existing colleges
- Recommends recognition or withdrawal of recognition of medical qualification granted by a university or medical institutions in ndiato the central government.
- Negotiates with the institutions located outside ndiafor recognition of their medical qualification on reciprocal basis and to recommend it to central government
- Lays down standards of professional conduct, etiquette and code of ethics to be observed by the practitioners of Homoeopathy

Central Register

The CCH maintains a Central Register of Homoeopathic Practitioners based on the State Registers furnished by the State Councils/Boards of Homoeopathy. A practitioner whose name is borne in Part I of the Central Register, can practice anywhere in the country. Practitioners whose names are borne in Part II of the Central Register, if intend to practice in a State other than the State where they are registered, can practice with the previous approval of the concerned State Government.

Regulations

India has adopted an organized university level education system for Homoeopathy at par with corresponding conventional and other Indian medical systems in the country. Uniformity and standardization of education were brought in by Central Council of Homoeopathy in 1983 and 1989 through the notification of different regulations (Table- 24)

[70] Central Council of Homoeopathy [Internet]. New Delhi(IN): Department of AYUSH © 2011 [cited 2012 Sept 04]. Available from: http://www.cchindia.com

Table 24 CCH Regulations

Sl. No.	Regulation	Course	Duration
1.	Homœopathy DHMS Regulations, 1983	Diploma Course*	4 years including six months internship
2.	Homœopathy BHMS Regulations, 1983	Degree Course	5 ½ years including one year Internship
3.	Homœopathy BHMS Regulations, 1983	Graded Degree Course	2 years including six month internship for diploma holders
4.	Homœopathy MD(Hom.) regulations, 1989	Post Graduate degree course	3 years

* The DHMS diploma course was stopped from February 1999 onwards.

5. 5 CLINICAL PRACTICE

As in 2011, there are 279518 [24] registered homœopathic practitioners (185. 8 practitioners per million population). The health human resource formed by these practitioners has an immense potential in delivery of health care services at primary, secondary and tertiary levels. Homœopathic practitioners are there in both public and private sectors, in rural and urban settings.

Mandatory registration with the registers maintained by the state bodies (State Homœopathic Boards/Councils) and the central body (CCH) permits practice of medicine through homœopathic intervention at all levels of health care (primary, secondary and tertiary health care).

The potential of Homœopathy in health care delivery is immense and is in the process of being fully exploited in both government and private sectors, primarily due to its availability, accessibility, affordability and provision of safe, efficacious treatment.

In the public sector, basic health care through homœopathic treatment is provided to the general public by homœopathic hospitals and dispensaries set up by the government. The network of 7695 homœopathic dispensaries run by the central and state governments and autonomous bodies of the Government including Municipal Councils provide primary health care services. Homœopathic

treatment facilities are also provided by public sector undertakings such as Thermal Power Corporations, National Aluminum Corporation, Central Reserve Police Force, Border Security Force, etc.

Although India has a large number of public health care facilities, it is estimated that out of pocket expenditure on health services is of the tune of 85%[71] which is among the highest in the world. Even for the AYUSH systems, including Homœopathy, with the availability of private practitioners, the patients tend to seek treatment in the private sector. Private practice, therefore, is highly popular and co-exists with the public health care facilities in almost all parts of the country. Since the private sector is a predominant provider of health-care services, public-private partnership (PPP) is advocated as a sound policy option [72]. The involvement of private providers tends to improve the quality of homeopathy services by ensuring the employment of only qualified and skilled Homeopathic doctors, strengthen the public health system, wean away people from quacks, improve access to health care at relatively low cost, help mainstream the homeopathy system, and avoid malpractice[73]

A majority of practitioners operate singly through private clinics, which vary immensely in terms of available facilities and consultation costs and treatment costs. Small clinical establishments with limited clinical facilities are there, as also, large multi specialty facilities, with inpatient, outpatient departments, laboratories, and para-clinical facilities. Homœopathic treatment is also available in large allopathic hospital establishments largely through the efforts of individual homœopathic practitioners in the private sector and through co-location of facilities in the government sector. Similar co-location exists in dispensaries and clinical settings in private and public establishments. This has led to formation of cafeteria approach, where the individual choice of therapeutic options by patients is governed by accessibility and affordability to services and personal preferences, rather than being dictated by the insurance sector and the pharmaceutical industry.

Clinical establishments with exclusive homœopathic practitioner teams or multi-disciplinary teams promote, operate and provide holistic health care. With advancement in technology, consulting on the internet has become easy and is a popular option. A number of e-consultation facilities are available in private and public sector.

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[71] World Health Organization National Health Account database. Out-of-pocket health expenditure (% of private expenditure on health) per year 2007-10, India. 2012[cited 2012 Oct. 26]. In The World Bank [Internet]. © 2012 The World Bank Group[updated 2012 Apr. 02]. Available at http://data.worldbank.org/indicator/SH.XPD.OOPC.ZS.

[72] Venkat Raman, A, Björkman JW. Public-Private Partnership in Health care in India, Routledge (2009). Available from: http://www.routledge.com/books/details/9780415467285/

[73] Raman AV, Manchanda RK. Public-private partnerships in the provision of homeopathic services in the city of Delhi, India. Int J High Dilution Res [online]. 2011 [cited 2012 October 26]; 10(37): 353-361. Available from: http://www.feg.unesp.br/~ojs/ index.php/ijhdr/article/view/459/543

Homœopathic hospitals operate along with educational colleges and independently providing an array of OPD and IPD services including radiological and pathological facilities. The numbers of hospitals in the country are, however, limited. These cater primarily to patients requiring long term care rather than intensive care. As such the uptake in these hospitals is limited.
Homœopathy in India has been popularized by philanthrophic organizations and individual efforts. Charitable homœopathic clinics, hospitals provide treatment at no cost or at very minimal cost to the patients. Though largely catering to the lower income group, persons from middle and upper income group also access these facilities. These non-governmental organizations, trusts and societies have enhanced the outreach of services to the poorest of the poor in the country. Treatment is provided along with various other public health services including sanitation, hygiene, ante-natal care, infant care, etc.

Most of the practitioners prefer to dispense medicines from their own clinics which are permitted and require no separate dispensing licenses. Pharmacies, though regulated, see frequent over the counter dispensing of medicines in limited quantities.

Homœopathic softwares developed in India are used by practitioners in the country and abroad. These softwares not only facilitate record maintenance, but assist in homœopathic case taking, prescription and follow up decision making. India also has a number of print and e-publications from private bodies. The peer reviewing process has been incorporated by some of the Journals for improving the quality of publications.

The accessibility and acceptability of treatment facilities coupled with the governmental institutional, regulatory and legislative mechanism has paved the way for integration of Homœopathy in the health care services.

5.6 Homœopathic Associations

Two largest associations of the country are Indian Institute of Homœopathic Physicians and Homœopathic Medical Association of India, which are national associations with respective state chapters. These associations have state branches and organize national level conferences, regularly. Also, the state branches conduct zonal seminars and continuing medical education programmes apart from organizing free health camps and health fairs.

The All India Institute of Homœopathy was formed in 1944, which was later renamed as Indian Institute of Homœopathic Physicians. It is actively involved in prompting the Government of India to take steps in the establishment and regulation of Homœopathy in the country [74]. The Homœopathic Medical Association of India[75], first formed in 1975, is one of the largest organizations of homœopaths in India. It promotes cooperation among the homœopathic fraternity.

[74] Indian Institute of Homoeopathic Physicians[Internet]. Punjab 2007 [cited 2012 Oct 1] Available at: www.iihp.co.in
[75] The Homooepathic Medical Association of India [Internet]. 2011 [cited 2012 Oct 1] Available at: http://hmai.in

The Indian chapter of the international homeopathic medical society LMHI [76] has participation from homœopathic physicians from all over the country. The LMHI is exclusively devoted to non-profit activities, serving philanthrophic benefits and favors creation of a link among licensed homeopaths and societies with persons who are interested in homeopathy. It promotes overall sustainable development of Homœopathy within and outside India. Indian homoepaths are active members of the Asian Homoeopathy Medical League[77] uniting homoepathic physicians from different asian countries for the cause of Homoeopathy.

These and a number of other homœopathic associations are actively working for information exchange, professional cooperation and development of Homœopathy in the country. These associations organize seminars, workshops, conferences and encourage experience sharing amongst members. It is estimated that about 8-10 national level conferences are organized in different parts of the country every year. .

Small practitioner groups also exist in a large number of cities in the country, who meet regularly to share clinical experiences. The experienced consultants, individually or in groups conduct workshops, CME programmes, lectures and seminars which see participation of practitioners, academicians and students from all parts of the world. Health fairs and exhibitions are held in the country where Homœopathy is promoted by free consultation camps and by IEC material.

[76]LMHI Indian Chapter[Internet]. 2012 [cited 2012 Oct 1] Available at: www.lmhiindia.in

[77]Asian Homoepathic Medical League (intenet) 2012 [cited 2012 October 1]. Avaialable at: www.ahml.in

FURTHER READING

6.1 LIST OF PUBLICATIONS BY CCRH

HOMŒOPATHIC RESEARCH COMPILATIONS

1. Indian Journal of Research in Homœopathy -Volume 1-9 (4 issues of each volume)
2. CCRH Quarterly Bulletin (Last published edition Volume 28(4))
3. A Compendium of Research Papers
4. Evidence Based Homœopathy
5. Collaborative studies in Homœopathy
6. Scientific Validation of Homœopathy through Extra Mural Research Scheme of Dept. of AYUSH
7. CCRH- An Over View of Activities & Achievements
8. Pocket Manual ofActivities and Achievements of CCRH

CLINICAL RESEARCH

1. Disease Monograph – Lymphatic Filariasis
2. Disease Monograph – HIV/AIDS and Homœopathic Management
3. Disease Monograph – Menopausal Syndrome
4. Disease Monograph – Diabetes Mellitus
5. Disease Monograph – Urolithiasis
6. Clinical Research Studies Part – I
7. Clinical Research Studies Part – II
8. Clinical Research Studies Part – III
9. Disease Monograph - Bronchial Asthma

DRUG MONOGRAPHS

1. Monograph: Kali muriaticum
2. Monograph: Terminalia chebula
3. Monograph: Carica papaya
4. Monograph: Boerhaavia diffusa
5. Monograph: Baryta iodata
6. Monograph: Acalypha indica
7. Monograph: Holarrhena antidysenterica
8. Monograph: Ocimum canum
9. Monograph: Tylophora indica
10. Monograph: A Proving of Abroma augusta
11. Monograph: A Proving of Atista indica
12. Monograph: A Proving of Cassia sophera
13. Monograph: A Proving of Cynodon dactylon
14. Monograph: A proving of Hydrocotyle asiatica
15. Monograph: A Proving of Aegle folia
16. Monograph: A Proving of Aegle marmelos

17.Monogrpah : Thea chinensis
18.Monograph : Cassia fistula
19.Monograph: Alfalfa
20.Monograph: Cynodon dactylon (Revised)

DRUG STANDARDIZATION

1. Standardisation of Homœopathic Drugs; Vol. 1
2. Standardisation of Homœopathic Drugs; Vol. 2
3. Standardisation of Homœopathic Drugs; Vol. 3
4. Standardisation of Homœopathic Drugs; Vol. 4
5. Pharmacological actions of Homœopathic Drugs
6. Identification of Homœopathic Drugs of Plant Origin
7. A Handbook of Medicinal Plants used in Homoeopathy
8. Plants In Ethno medicine Of The Nilgiri Tribes In Tamil Nadu, India
9. Vernacular names of Plant Drugs in Homoeopathic Pharmacopoeia of India
10. Common Indian plants used in Homoeopathy

DRUG PROVING

1. Homœopathic Drug Provings conducted by CCRH
2. Homœopathic Drug Provings: Vol. - 2
3. Homœopathic Drug Provings: Vol. – 3
4. Homœopathic Drug Provings: Vol. – 4
5. Homœopathic Drug Provings: Vol. – 5
6. New Drugs Proved by CCRH

CLINICAL VERIFICATION

1. Study of Homœopathic medicines through clinical verification – A new perspective Vol. 1
2. Study of Homœopathic medicines through clinical verification – A new perspective Vol. 2

MOTHER AND CHILD HEALTH

1. Handbook on Homœopathy for 'Mother and Child Care'
   (Assamese, Bengali, English and Hindi)
2. Training Manual Vol. 1 Homœopathy for Mother and Child Care (Obstetrics)
3. Training Manual Vol. 2 Homœopathy for Mother and Child Care (Pediatrics)
4. Training Manual Vol. 3 Homœopathy for Mother and Child Care (General Topics)
5. Homœopathy for Mother & Child Care: An overview
6. Mainstreaming Homœopathy for Mother& Child Care
7. Strategic Development of Homœopathy for Mother & Child Care
8. Training modules on Homœopathy for Mother and Child Care

LITERARY RESEARCH

1. Additions from Boericke's Repertory to Kent's Repertory- Chapter 'Teeth'
2. Additions from Boericke's Repertory to Kent's Repertory — Chapter 'Mouth'

3. Additions from Boericke's Repertory to Kent's Repertory — Chapter 'Eye & Vision'
4. Additions from Boericke's Repertory to Kent's Repertory — Chapter 'Ear and Hearing'
5. Additions from Boericke's Repertory to Kent's Repertory — Chapter 'Larynx & Trachea, Respiration, Cough, Expectoration and Chest'
6. A review and revision of Kent's repertory (Kunzli's additions) – Chapter Generalities – Additions from C.B. Knerr's repertory and other works
7. Additions from Boericke's Repertory to Kent's Repertory- Chapter 'Nose'
8. Additions from Boericke's Repertory to Kent's Repertory- Chapter 'Mind'
9. Additions from Boericke's Repertory to Kent's Repertory- Chapter 'Throat'
10. Additions from Boericke's Repertory to Kent's Repertory- Chapter 'Face'
11. Database of Homœopathic Publications
12. Current Health Literature Awareness Services (CHLAS)
13. A review and revision of Kent's repertory (Kunzli's additions) – Chapter Generalities – Additions from C.B. Knerr's repertory and other works
14. A Check list of Homoeopathic Medicinal Plants of India

Medico abstracts on

- Cancer
- Bronchial Asthma
- Diabetes Mellitus
- Rheumatoid Arthritis
- Renal Disorders
- Eye Disorders
- Homœopathic Research in India

ACADEMIC

1. Handbook on Homœopathy: Case taking to prescribing
2. A handbook of Home Remedies in Homœopathy
3. Samanya Homoeopathy Upchar Pustika
4. Homœopathic Materia Medica of Indian drugs
5. Keynotes of Homœopathic Materia Medica Volume 1
6. Guidelines for Homoeopathic Practitioners for Clinical Management of Dengue
7. Training Manual for Homoeopathy & Ayurveda practitioners on HIV/AIDS
8. Training Manual for ANM, ASHA and AWW

WORKSHOP PROCEEDINGS

1. Proceedings of Workshop on 'Research methodology and standardisation'
2. Proceedings of Workshop on 'Chronic Sinusitis & other Respiratory tract infections'
3. Proceedings of Workshop on 'HIV/AIDS'
4. Proceedings of Workshop on 'Management of Geriatric disorders through Homœopathy'
5. Proceedings of Workshop on Research Methodology
6. Souvenir on the occasion of Silver Jubilee Celebration of CCRH

7. Pre-workshop Manual of National Campaign on Homœopathy for Mother & Child Care
8. Proceedings & Resolutions of National Workshop on Homœopathy for Healthy Mother & Happy Child

6.2 IMPORTANT WEBSITES:

1. www.ayushportal.ap.nic.in — AYUSH Research portal
2. www.cchindia.com — Central Council of Homœopathy
3. www.ccrhindia.org — Central Council for Research in Homœopathy
4. www.ccrhpubonline.com — E- books
5. www.cdsco.nic.in/ — Central Drug Standard Control Organization
6. www.delhihomeo.com — Delhi Homœopathic AnusandhanParishad, Govt. of Delhi
7. www.hplism.nic.in — Homœopathic Pharmacopoiea Laboratory, Ghaziabad
8. www.ijrh.org — Indian Journal of Research in Homoeopathy
9. www.indianmedicine.nic.in — Ministry of AYUSH
10. www.journalonweb.com/ijrh — Online manuscript management system of IJRH
11. www.mohfw.nic.in — Ministry of Health and Family Welfare, Government of India
12. www.nih.nic.in — National Institute of Homeopathy. Kolkatta
13. www.nmpb.nic.in — National Medicinal Plants Board, Delhi
14. www.nrhm-mis.nic.in — National Rural Health Mission

GLOSSARY

The terminology used in this document is commonly used within the homœopathic community. The definitions in this glossary are not absolute but provide consistency[54,78,79,80].

Acute Otitis Media: Acute inflammation of the middle ear or tympanum.

Adverse Effects: Noxious and unintended responses produced by a drug in an organism, different from the symptoms from which the organism is already suffering. (Used with drugs, chemicals, or biological agents in accepted dosage - or with physical agents or manufactured products in normal usage - when intended for diagnostic, therapeutic, prophylactic, or anaesthetic purposes. It is used also for adverse effects or complications of diagnostic, therapeutic, prophylactic, anaesthetic, surgical or other procedures, but excludes contraindications.

Aggravation: Factors such as time of day, weather, movement or position of the body, etc. which cause existing symptoms to become worse.

Amelioration: Factors such as time of day, weather, movement or position of the body which cause a reduction in the severity of symptoms.

Anaphylactic: Relating to anaphylaxis; manifesting extremely great sensitivity to foreign protein or other material.

Anthroposophical medicine: Anthroposophical medicine is a complementary medicine that combines elements of conventional medicine with homeopathy and naturopathy. It is based on the spiritual philosophy of anthroposophy, which regards human wellness and illness as biographical events connected to the body, mind and spirit of the individual. It often incorporates physical and artistic therapies and biographical counseling.

Antioxidant: An agent that inhibits oxidation; any of numerous chemical substances including certain natural body products and nutrients that can neutralize the oxidant effect of free radicals and other substances.

Anxiolytic: syn. Anti-anxiety agent. Denoting the action of such an agent.

Atrial paroxysmal tachycardia: A period of very rapid and regular heart beats that begins and ends

[78]Adapted from the World Health Organization, Safety issues in the preparation of homeopathic medicines, WHO 2009. Available from www.who.int/medicines/areas/traditional/Homeopathy.pdf

[79]European Committee for Homoeopathy. Homoeopathic Thesaurus. 3rd Multi-lingual edition 1.2007 [Internet]. [Cited 2012

[80]Nov 1]. Available from: http://www.homeopathyeurope.org/publications/thersaurus/homeothesaurusmulti.pdf

Stedman's Medical Dictionary. 28th Edn; Maryland, Lipincott Williams & Wilkins; 2006.

abruptly. The heart rate is usually between 160 and 200 beats per minute. This condition is also known as paroxysmal supraventricular tachycardia.

Azo dye: Dye in which the azo group is the chromophore and joins benzene or naphtahalene rings; they include a large number of biologic stains (e. g. congo red and oil red O); also used clinically to promote epithelial growth in the treatment of ulcers, burns and other wounds; many have anticoagulant action.

Babesiosis: An infectious disease caused by a species of Babesia, transmitted by ticks. Animal hosts include cattle, sheep, deer and dogs. Subclinical human infection may be common by symptomatic disease occurs only sporadically and in limited geographic distribution. Immunodeficient and asplenic people are at higher risk of infection. Clinical features of the disease include fever, chills, and hemolysis with hemoglobinuria and jaundice. Severe disease may be complicated by cardiac and renal failure, respiratory distress syndrome, and CNS involvement. As in animals, human morbidity and mortality increase with age.

Clinical research: Clinical investigations of humans and animals in order to establish the safety and efficacy of diagnostic, therapeutic, or prophylactic drugs, devices, or techniques as well as to collect epidemiological data.

Clinical trial: Pre-planned clinical trial of the safety, efficacy or optimum dosage schedule of one or more diagnostic, therapeutic or prophylactic drugs, devices or techniques in humans selected according to pre-determined criteria of eligibility and observed for predefined evidence of favorable and unfavorable effects.

Clinical Verification: Clinical verification of a symptom picture established in a homeopathic drug proving is designed to demonstrate the clinical applicability (homeopathic symptom picture, specific symptoms or keynotes or specific therapeutic indications) of a homeopathic drug.

Constitution: The whole pattern of psychological and physical characteristics that identify an individual, including psychological and physical reactions to stimuli and circumstances that occur in everyday life.

Constitutional remedy: Constitutional remedy is a drug which matches a patient's constitution.

Controlled Clinical Trials: A clinical trial involving one or more test treatment, at least one control treatment, specified outcome measures for evaluating the studied intervention, and a bias-free method for assigning patients to the test treatment. The treatment may be drugs, devices, or procedures studied for diagnostic, therapeutic, or prophylactic effectiveness.

Dilution: Dilution has two meanings in Homœopathy:For a product, a dilution is a liquid homœopathic preparation which is potentized as described below (see the definition of potentization). Individual dilutions are also called potencies; As a procedure, dilution means the de-concentration process of a liquid or a solid preparation. One part of each stage in the preparation of a homœopathic medicine from its stock or previous dilution (potency) by adding one part of a previous solid or liquid phase to a predetermined weight or volume of the diluent (see Potentization below). Dilution occurs at all stages of production of the homœopathic medicines whether by addition of solid excipient in trituration or the addition of diluent in the liquid phase and succussion.

Double-Blind Technique: Neither the subject nor the person administering treatment knows which treatment any particular subject is receiving.

Dynamization: see potentization

Fifty Millesimal Potentization: Potentization where the total dilution is 1:50,000.

Genotoxicity: Genotoxicity describes a deleterious action on a cell's genetic material affecting its integrity. This includes both certain chemical compounds and certain types of radiation. Genotoxic substances are all those with affinity to interact with DNA - which is not proof of their dangerousness to humans, but does render them potentially mutagenic or carcinogenic.

Genus epidemicus: The combined symptoms of a large group of people afflicted with a disease or epidemic or a remedy that covers all the symptoms which that particular epidemic is capable of producing.

Glioma: Any neoplasm derived from one of the various types of cells that form the interstitial tissue of the brain, spinal cord, pineal gland, posterior pituitary gland, and retina.

Homœopathic aggravation: Worsening of existing symptoms in response to a homœopathic drug

Homœopath: A practitioner of homœopathic system of medicine.

Homœopathic complex: Method of homœopathic therapeutics using more than one constituent in a single drug.

Homœopathic Drug Proving: Clinical studies in which homœopathic drugs are administered to healthy volunteers in order to produce the symptoms specific to that substance and thereby reveal its inherent curative powers.

Homœopathic medicine (as in Drugs and Cosmetics Rules, 1945, Government of India): Homœopathic Medicine includes any drug which is recorded in homœopathic proving or therapeutic efficacy of which has been established through long clinical experience as recorded in authoritative homœopathic literature of India and abroad and which is prepared according to the techniques of homœopathic pharmacy and covers combination of ingredients of such homœopathic medicines but does not include a medicine which is administered by parenteral route.

Homœopathy: Classical Homœopathy is a system of medicine using preparations of substances whose effects, when administered to healthy subjects, correspond to the manifestations of the disorder in the individual patients.

Imponderabilia: Homœopathic medicines prepared from energy, emanating from natural and physical reactions. It means “not weighable”, i. e. which have no perceptible weights. They are energy forms such as sunlight (Sol), magnetic fields (Magnetis Polus Australis), radiation (X-ray).

Individualization: Prescribing on the basis of the complex of symptoms in the individual patient rather than on the common characteristics of the disorder from which the patient is suffering.

In-vitro: in an artificial environment, referring to a process or reaction occurring therein, as in a test tube or culture medium.

In-vivo: in the living body, referring to process or reaction occurring therein.

Materia Medica: Materials or substances used in the composition of traditional medical remedies. The use of this term in MeSH was formerly restricted to historical articles or those concerned with traditional medicine, but it can also refer to homœopathic remedies.

Materia Medica Pura: Compilation of original proving carried out by Dr. Samuel Hahnemann, the founder of Homoepathy. This work was published in 1811-31, and contains 67 fully proven drugs.

Metallopteinase: A family of protein- hydrolyzing endopeptidases that contain zinc ions as part of the active structure.

Miasm: A miasm is often defined by homœopaths as an imputed "peculiar morbid derangement of [the] vital force” which is considered as the fundamental cause of the disease. Dr. Hahnemann associated each miasm (psora, sycosis, syphilis) with specific diseases, with each miasm seen as the root cause of several diseases. (Hahnemann S (1833), The Organon of the Healing Art (5th ed.), aphorism 29)

Mother tincture: The initial homœopathic preparation made from source material that can be further potentized (also called “liquid stock”), sometimes used as homœopathic medicines, is regarded as the most concentrated form of a finished homœopathic medicine. Mother tinctures are obtained classically by maceration or percolation (sometimes also by digestion, infusion, decoction or fermentation) techniques from source materials according to a procedure prescribed by a recognized homœopathic pharmacopoeia. Sometimes a mother tincture corresponds to the first decimal dilution, “1D” or “1X” (10^{1}), mostly when dry plant material is used as starting material.

Nanoparticle: a particle with dimensions less than 100 nanometres.

Nosodes: Homœopathic medicines prepared from disease products from humans or animals; from pathogenic organisms or their metabolic products; or from decomposition products of animal organs.

Observational study: In research about diseases or treatments, this refers to a study in which nature is allowed to take its course. Changes or differences in one characteristic (e. g. whether or not people received a specific treatment or intervention) are studied in relation to changes or differences in other(s) (e. g. whether or not they died), without the intervention of the investigator. There is a greater risk of selection bias than in experimental studies. Although observational studies cannot provide definitive evidence of safety, efficacy, or effectiveness, they can: 1) provide information on “real world” use and practice; 2) detect signals about the benefits and risks of complementary therapies use in the general population; 3) help formulate hypotheses to be tested in subsequent experiments; 4) provide part of the community-level data needed to design more informative pragmatic clinical trials; and 5) inform clinical practice.

Organon of Medicine: Original statement of the principles of Homœopathy, developed by Dr. Samuel Hahnemann through a series of six editions from 1810 to 1842 in an aphorismic style.

Pharmacognostic: see pharmocognosy

Pharmacognosy: A branch of pharmacology concerned with the physical characteristics and botanic and animal sources of crude drugs.

Pharmacokinetics: Movements of drugs within biological systems, as affected by uptake, distribution, binding, elimination and biotransformation; particularly the rates of such movements.

Pharmacological: Relating to pharmacology or to the composition, properties, and action of drugs. Sometimes used in physiology to denote a dose (of a chemical agent that either is or mimics a hormone, neurotransmitter, or other naturally occurring agent) that is so much higher or more potent than would occur naturally that it might have qualitatively different effects.

Pharmacopoeias: Formal documents describing the composition, properties, manufacture and quality control of drugs

Pilot Studies: Clinical trials often performed to estimate treatment effects or recruitment rates, to test out the practicability of new methods and the feasibility or suitability esp. of a protocol to a larger clinical project, in order to select the most suitable design and to ensure adequate recruitment; sometimes studies with a poor design are also called pilot studies to avoid criticism.

Placebo Controlled Trials: Dummy treatment administered to the control group in a controlled clinical trial

Potency: The denominated degree of serial trituration or dilution and succussion that is reached for each homœopathic medicine. The degrees of dilution or potencies are normally indicated by the letters D, DH or X for successive 1 to 10 (decimal) dilutions, the letters C, CH or K or CK for successive 1 to 100 (centesimal) dilutions while Q or LM denote successive 1 to 50000 (Hahnemannian quinquagintamillesimal) dilutions. Dilution by 1 to 10 denotes 1 part processed with 9 parts of diluent (Hahnemannian decimal), dilution by 1 to 100, 1 part processed with 99 parts (Hahnemannian or Korsakovian centesimal), and so on. The number preceding the letters (e. g. D, C or LM) normally indicates the number of dilution steps employed. As a consequence of different views in various approaches in homeotherapy and because the notion of these terms may depend on the nature of the starting materials, the terms “high potency” and “low potency” cannot be defined unambiguously.

Potentization (also called dynamization): The combined process of serial dilution and succussion or Trituration at each step in the manufacture of homœopathic medicines from stocks. (According to the tenet of homeopathy, potentization represents the process by which the activity of a homœopathic medicine is developed.)

Pragmatic RCT: Pragmatic trials are more closely associated with effectiveness. These trials help to choose between different options for care. Pragmatic RCTs test effectiveness in everyday practice with relatively unselected participants and under flexible conditions; in this way, pragmatic RCTs can "inform decisions about practice.

Protocols: A document that states the rationale, objectives, statistical design, and methodology of the trial and the conditions under which it is to be performed and managed.

Randomized Controlled Trials: Experimental subjects are assigned to treatment groups according to some known probability distribution.

Reiters disease: A disease of unknown cause, occurring primarily in adult males, marked by urethritis, conjunctivitis, and arthritis.

Repertory: Systematic cross reference of symptoms in the form of rubrics to the homœopathic drugs for which those drugs are indicated.

Root knot disease: The disease is caused by microspcopic, parasitic, soil in-habiting nematodes otherwise known as Meloidogyne. These nematodes burrow into the soft tissues of the root tips and young roots, and cause the nearby root cells to divide and enlarge. Affected crops may show one or more of the following signs of attack: slow/stunted growth, yellowing of the leaves, wilting of the plant despite adequate soil water content, collapse of individual plants.

Sarcodes: Homœopathic medicines made from healthy animal tissues or secretions.

Side effects: see adverse effects

Similia Principle: The underlying principle of Homœopathy that substances may be used therapeutically to treat disorders similar to that which they will themselves induce in a healthy subject .

Similimum: It is used for single homeopathic medicine homœopathic medicine the drug picture of which most nearly approaches the total symptom complex of the patient.

Single-Blind Method: Study design where in participants do not know which treatment (verum or placebo) they are receiving.

Succussion: The act of shaking diluted homœopathic remedies as part of the process of potentization.

Trituration: Trituration has two meanings in Homœopathy. For a product, a trituration means a solid homeopathic preparation that has been potentized. As a homœopathic procedure, trituration means the de-concentration process of a solid material with another solid material. It is a stage in the preparation of a solid homœopathic medicine from its stock or previous trituration by adding one part to a prescribed number of parts of diluent (lactose or other diluent as defined in an appropriate pharmacopoeia in official use, or other officially recognized documents).

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