Innovative Thought Forum

# Round Table of Education group on "Integrative Health Policy"

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## Terms of Reference for 'Education' Group

1. To analyse international models in integrative medical education.
2. To assess the need and potential of Integrative Medicine course(s) in the country blending Ayurveda, Yoga and other traditional systems of medicine with modern medical system.
3. To assess potential pathways for job opportunities, career progression and demand of future graduate and postgraduate professionals in Integrative Medicine.
4. To outline the broad principles and content of curriculum for such course(s) (including teaching-learning strategy, immersive training, pedagogy and Assessment etc.) Grounded in the Indian context.
5. To suggest model(s) of institutional arrangements required for teaching Schools/colleges in terms of departments, faculty, infrastructure, clinical Services and academic governance, etc.,
6. To suggest regulatory system to oversee Integrative Medicine education in the country.
7. To develop an implementation plan for phased roll-out of Integrative Medicine Education program in the country outlining estimates of infrastructure requirements, capacity development needs and financial resources etc.
8. To outline need for integrative nursing education and sustained scale up of integrative nursing care.

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# INTEGRATIVE MEDICAL EDUCATION

**Introduction:**

Medical education as it is prevalent today, comprises of medical education of modern medicine of allopathic stream and many of the traditional and indigenous systems of medicine described under the AYUSH system. Ayurveda, the ancient system of Bharatiya medicine has existed in our country for more than 5000 years, which continued to remain the backbone of healthcare for a fairly long period of time. Siddha, another indigenous system of medicine, emerged in south India and it still remains relevant for the healthcare needs of significant population living in southern peninsula. Unani and homeopathy are other systems, under the AYUSH, which entered the country from outside but grew in influence over the time. Many other systems of medicine, including Tibetan system of Sowa- Rigpa or Amchi has been practised in Ladakh, and other hilly regions and it still plays an important role in the life of those living in remote regions of high altitude. Yoga and Naturopathy are other very important systems of AYUSH which remain invaluable for promotion of health and prevention of diseases, apart a significant role in the cure of many chronic life style diseases. In fact, ***Ashtang Yoga of*** **Patanjali** is one of the most authentic method of holistic health today. The significance and practice of yoga has grown substantially after the introduction of **International Yoga Day** by Prime Minister of India in UN assembly in the year 2014, and approximately 200 countries of the world adopting it.

Modern medical system, as it exists today, has roots of its origin in the western world. It grew in significance during the last two centuries, primarily due to the state patronage and revolution in modern medical healthcare system, after the discovery of germ-theory of disease and anti-microbials and success of modern vaccination program in containing many infectious diseases.

State-patronage given to modern medical system in the country during the British rule and pre-eminent support, even after independence by national government led to the prospering of this system, sometimes even at the detriment of indigenous systems of medicine. It is ironical to note that modern allopathic medical education started in India, before the start of modern medical education in US, which was started after the Abraham Flexner Report of 1910. Before that, Indian subcontinent had at least 4 medical schools of modern allopathic education. The above facts and many more factors led to neglect of Indian system of medicine including Ayurveda, which declined in popularity all over the country. During these periods, allopathic system of medicine, based on reductionist theory became the main system of medical education and healthcare in Bharat. A major policy shift took place in the year 2014, when an independent Ministry of AYUSH was created in the government of India. It was given the task for all-round comprehensive development of all the indigenous traditional and existing systems of healthcare in Bharat.

'Modern Medicine' as it is called now, has gradually developed after the thinking and philosophy of the French scientist **Rene Descartes** (1637), who announced his theory of **'Reductionist Science'**. His main contention was that the study of anything is done in smaller and smaller parts and when this knowledge is put together, it gives a knowledge of the whole. The western experimental science developed based on this concept and accepted the things as true only, when it can be duplicated by experiment and the results obtained are universally true. This is definitely correct in terms of matter-based science till we go beyond the matter to its source- Energy. Einsteinian theory of E=mc2, marks the beginning of going into subtler aspects of energy to quantum science, when it is believed that quanta of energy can be occasionally seen as energy wave or as particle. The results are influenced by the observer's faculty of vision and mind. Now, Quantum Science believes, as per Warner Heisenberg, that there may be something which the observable energy may be influenced by and which is more

subtle, and he called it as 'consciousness'. And this is probably the fundamental thing from which everything has evolved.

Modern science, till recently believed in the primacy of matter based on Newtonian laws, and mind is totally an unconnected entity which has to be studied separately and has nothing to do with the structure and function of living things. Only in recent few years, the science of 'Psycho-neuro-immunology' started believing in total interconnectedness between subtle energy of mind or consciousness and Anatomy and Physiology of human body. But all the advances of Modern Medicine are matter based interventions and act through body parts as seen and experimented. It holds good in all acute medical conditions, but when it comes to chronic and Lifestyle based physiology and Pathology, the role of mind and subtle energies of human being gain more and more importance in maintenance of health and treatment of diseases. That is why purely Modern Medicine based approach becomes incomplete and fails to prevent the occurrence of disease, correct the disease states and prevent recurrences.

**Definition of Integrative Medicine (IM):**

It is healing-oriented medicine that reemphasizes the relationship between patient and physician, and integrates the best of complementary and alternative medicine with the best of conventional modern medicine.

**William Osler** (1849–1919), one of the founding fathers of modern medicine in US observed that "It is more important to know what patient has a disease, than what disease the patient has". Yet modern medicine appears to have strayed far from his teaching. Managed care, the development of clinical practice guidelines, and evidence-based medicine have enhanced clinical medicine and have undermined Osler's call to know the human being experiencing the disease.

In 1910, Abraham Flexner report profoundly affected American medical education by insisting on the scientific basis of medical practice. The Flexner model helped create the 20th-century academic health centres in which education, research, and practice are inseparable. Gradually this model became, one of the most popular system of medical education and healthcare, all over the world. It systematically led to the down fall of the traditional and ancient systems of medical practice, all over the world. Traditional and complementary systems of medicine (TCM), as they came to be known all over, as popularized by WHO. Modern system of medical education achieved many milestones in the healthcare outcomes in the world. However, it had many ill consequences for the overall health scenario of the globe.

The historical high reliance on expensive and invasive technology, and the widespread perception that physicians today are more focused on disease than on healing and wellness has opened tremendous opportunities for providers of alternative therapies. Nearly 50% of Americans are now using alternative medicine, and the amount of money they spend on it exceeds the amount of money spent on primary care. In India, almost all the population uses, non-allopathic medicine at some or other time in their life. In 2002, WHO advised its member states to develop policies for respective traditional and complementary medicine systems.

Importantly, **integrative medicine** is not synonymous with **complementary and alternative medicine (CAM)**. It has a far larger meaning and mission in that it calls for restoration of the focus of medicine on health and healing and emphasizes the centrality of the patient- physician relationship. In addition to providing the best conventional care, integrative medicine focuses on preventive maintenance of health by paying attention to all relatively neglected components of lifestyle, including diet, exercise,

stress management, and emotional well-being etc. It insists on patients being active participants in their health care as well as, on physicians viewing patient as whole person—mind, community member, and spiritual being, as well as physical body. Finally, it asks physicians to serve as guides, role models, and mentors, as well as dispensers of therapeutic aids.

Also,Integrative medicine is a neologism coined by practitioners to describe the combination of practices and methods of alternative medicine with conventional medicine. The term has been popularized by, among others, Dr. Deepak Chopra, and Dr. Andrew Weil. Dr. Weil says that patients should take the Western medicine prescribed by the doctor, and then incorporate alternative therapies such as Natural Vitamins, minerals, essential fatty acids, antioxidants, herbs and other spiritual strategies.

Aristotle (384-322 BC) was one of the first holistic physicians who believed that every person was a combination of both physical and spiritual properties with no separation between mind and body. René Descartes (1596-1650), respecting the great unknown, did his best to separate the mind and the body to protect the spirit from science. He believed that mind and spirit should be the focus of the church, thus leaving science to dissect the physical body. This philosophy led to the "Cartesian split" of mind-body duality. Shortly afterward, John Locke (1632-1704) and David Hume (1711-1776) influenced the reductionistic movement that shaped our science and medical system. The idea was that if we could reduce natural phenomena to greater simplicity, we could understand the larger whole.

Even, before Aristotle, Ayurveda was in vogue which has roots in the hymns of Atharva Veda, where mention of several diseases with their treatment are described. Charak, Sushruta and Vagbhatt were the holistic physicians. As such, **Ayurveda is rooted in the holism**. Maharshi Vagbhatt, wrote ***AshtangHridayam***, a treatise on healthy life style and measures for prevention of diseases and promotion of health.

In 1910, the Flexner reportwas written and it had a significant impact on the development of allopathic academic institutions. They came to emphasize the triad that prevails today: research, education, and clinical practice. Reductionism and the scientific method produced the knowledge that encouraged the growth of these institutions. Unfortunately, this approach does not work well for chronic diseases that involve more than just a single part. In fact, all body organs are interconnected, so that simply repairing a part, without addressing the underlying causes for its malfunction provides only temporary relief and a false sense of security.

**Integrative Medicine (IM):**

- Emphasizes relationship-centred care
- Integrates conventional and complementary methods for treatment and prevention
- Involves removing barriers that may activate the body's innate healing response
- Uses natural, less invasive interventions before costly, invasive ones when possible
- Engages mind, body, spirit, and community to facilitate healing
- Maintains that healing is always possible, even when curing is not.

Integrative medicine is about changing the focus in medicine to one of health and healing rather than disease. This involves understanding the influences of mind, spirit, and community, as well as the

body. It entails developing insight into the patient's culture, beliefs, and lifestyle that will help the provider understand how best to trigger the necessary changes in behaviour that will result in improved health and it will bring more value to health care delivery.

**Increasing Value through IM:**

Integrative medicine can increase value and lower costs through two of its foundational values:

(1) by shifting the emphasis of health care to health promotion, disease prevention, and enhanced resiliency through attention to lifestyle behaviours; and

(2) by bringing low tech, less expensive interventions into the mainstream that preserve or improve health outcomes.

**Integrative Medicine: Summarized**

- Emphasizes relationship-centred care
- Develops an understanding of the patient's culture and beliefs to help facilitate the healing response
- Focuses on the unique characteristics of the individual person based on the interaction of mind, body, spirit, and community
- Regards the patient as an active partner who takes personal responsibility for health
- Focuses on prevention and maintenance of health with attention to lifestyle choices, including nutrition, exercise, stress management, and emotional well-being,
- Encourages providers to explore their own balance of health that will allow them better to facilitate this change in their patients
- Requires providers to act as educators, role models, and mentors to their patients
- Uses natural, less invasive interventions before costly, invasive ones when possible
- Recognizes that we are part of a larger ecosystem that requires our efforts in sustaining its health so we can continue to be a part of it
- Uses an evidence-based approach from multiple sources of information to integrate in the best therapy for the patient, be it conventional or complementary
- Searches for and removes barriers that may be blocking the body's innate healing response
- Sees compassion as always helpful, even when other therapies are not
- Focuses on the research and understanding of the process of health and healing (salutogenesis) and how to produce it
- Accepts that health and healing are unique to the individual and may differ for two people with the same disease
- Works collaboratively with the patient and a team of interdisciplinary providers to improve the delivery of care
- Maintains that healing is always possible, even when curing is not

- Agrees that the job of the physician is 'to cure sometimes, heal often, support always'—***(Hippocrates)***.

**1. To analyze international models in integrative medical education:**

**WHO Recommends for Integration of Traditional Medicine (TM) with Modern Medicine (MM):**

WHO recommends that when integrating TM in healthcare system, the process and steps taken will vary from country to country and region-to-region. It recommended for the following key processes to be undertaken in (source:Traditional Medical Strategy 2014-2023)-

- Surveying Traditional and Complementary Medicine (T&CM) use including benefits and risks in the context of local history and culture and promoting a keener appreciation of the role and potential of T&CM;
- Analysing national health resources such as finance and human resources for health;
- Strengthening or establishing all relevant policy and regulations for T&CM products, practices and practitioners;
- Promoting equitable access to health and **integration** of T&CM into the national health system including reimbursement, and potential referral and collaborative pathways.

It is important to consider the importance of each practice in the national context when developing an integration policy. In Sweden, a number of lessons and recommendations were learned from the integration of T&CM in primary care and some important issues were highlighted;eg.- the availability of specialist training for general practitioners, preferably computer-based documentation reflecting multi-modular management, combination of qualitative and quantitative research methods, interdisciplinary dialogue and collaboration.

A knowledge-based policy is the key to integrate T&CM into national health systems. Research should be prioritized and supported in order to generate knowledge. While there is much to be learned from controlled clinical trials, other evaluation methods are also valuable. These include outcome and effectiveness studies, as well as comparative effectiveness research, patterns of use, and other qualitative methods. There is an opportunity to take advantage of, and sponsor such "real world experiments" where different research designs and methods are important, valuable and applicable. The importance of embracing various kinds of contributory research methods and designs in

the effort to build a broad evidence base to inform national policy and decision making has been underlined by the National Institute for Health and Care Excellence (NICE), UK, as well as others.

**The Goal of WHO Strategy for Integration:**

The goals for the WHO Traditional Medicine Strategy 2014-2023 are to support Member States in:

1. Harnessing the potential contribution of T&CM to health, wellness and people-centred health care;
2. Promoting safe and effective use of T&CM through the regulation, evaluation and integration of T&CM products, practices and practitioners into health systems, as appropriate.

The strategy has been developed to aid Member States in determining and prioritizing their needs, providing for effective delivery of services, and developing appropriate regulations and policy to ensure the safe use of T&CM products and practices. It is important to remember that this strategy is

merely a guide to assist countries in developing T&CM strategic goals in accordance with their own national capacities, priorities, relevant legislation and circumstances. To this end, WHO is committed to monitoring the implementation of the strategy and will disseminate it as broadly as possible.

**Chinese Model of IM education:**

Traditional medicine in China, known as **Traditional Chinese Medicine** (TCM) includes moxibustion, hot cupping, acupuncture, massage, herbal medicine and nutraceutical medicine etc.

After the introduction of modern, **western medicine** (WM) in China, it was realized that the co-operation of TCM and WM is more efficient for the cure and prevention of disease, than each of them separately. The equality of TCM and WM was legally established in 1990s. Department of **Integrated Traditional Chinese and Western Medicine** (ITCWM) were opened in traditional Chinese medical schools and western medical schools. ITCWM has been established as a new academic field through education, training, research, academic activity and publishing text books.

Methodologically, a distinctive feature of **Chinese medicine** (CM) is its systems theory, which is also the difference between CM and WM. From the very beginning, CM has taken the human body as a whole from the concept of "qi, blood, yin-yang, viscera (zang-fu) and meridian & channel", rather than a single cell or a particular organ. The core of CM is holistic view and dialectical view. Chinese herbal medicine treats a diseased state by regulating and mobilising the whole body rather than just regulating a single factor, since the diseased state is not only a problem in a local part of the body, but a local reflection of imbalance of whole body. It is held that system biology is a bridge of integrated CM and WM. Traditional CM provides personalized medical treatment based on the theory of TCM characterized by holistic concept and pattern differentiation.

In China, majority of the healthcare institutions are providing TCM services, including all levels of traditional medicine hospitals and general hospitals, clinics and health stations in urban and rural areas. About 90% general hospitals include a TCM department and provide TCM services for both out-patients and in-patients. TM practitioners are allowed to practice in both public and private clinics and hospitals. Government and private insurance fully cover TCM including Tibetan, Mongolian, Uygur and Dai traditional medicine. Public and private are free to choose TCM or biomedical (modern) medicine for healthcare services, or their doctors can provide advice on which therapies may be better suited to their health problems.

**TCM education** is a mandatory part of medical education in China for the students of modern medical system. The Chinese state system of medical education has been undergoing reform since the turn of the millennium, with greater impetus since 2008. These reforms impinge on pluralistic health care institutions. Medical pluralism has thrived over the past 60 years in China within state-run hospitals, universities, and clinics in which biomedicine and traditional Chinese medicine (TCM) are practiced in parallel. Despite significant differences between the ways, these two medical systems understand the body and treat illnesses, they are often taught and practiced side-by-side within the Chinese state health care system. Unlike Complementary and Alternative Medicine (CAM) in the US, TCM is a mandatory rather than an optional component of a biomedical education in China. The Chinese Ministry of Health stipulates that undergraduate biomedical universities must provide nationally standardized courses in TCM as TCM education is a mandatory part of modern medical education in China. A survey conducted in China over ten years ago showed that students in biomedicine universities receive two semesters of training in traditional Chinese medicine, amounting to over 200 didactic hours. Students complained that Chinese medical theory taught in the classroom was

challenging and mysterious. Some called for "better integration of theory and practice" in didactics. If given the opportunity to train further in TCM, the majority of students would prefer the clinical setting, citing a desire for more "experiential/practical training".

China has a unique dual-track system of "TCM and Western medicine, during their training program." Clinicians, so trained and practicing in Chinese teaching hospital regularly employ TCM for their patients. Most have even approvingly utilized TCM personally. It is felt by Chinese academicians that TCM will continue to play an important role in most Chinese clinicians' therapeutic arsenals, which warrants more targeted clinical training in TCM in the future. Integrating, it is also felt by Chinese medical education experts that dual-track, medical and biomedical education at the bedside, harbours numerous challenges that will require greater collaboration between TCM and Western medicine physicians to overcome. Also, issues of limited mutual understanding between TCM and modern medicine persists, so that concerted efforts are needed for complete integration of traditional Chinese medicine into medical education reform in future, as is felt by Chinese medical education experts.

**Status of IM education in US:**

In 1997, the American Medical Association proposed incorporating elective CAM curriculum in medical schools, leaving individual schools free to decide the extent and makeup of course requirements. Subsequently, several medical schools started an education and training program in IM.

Earlier, Eisenberg's survey of use of Complementary and Alternative Medicine (CAM) revealed that 34% adults in US had used at least one unconventional form of healthcare in previous year. It was evident that consumer dissatisfaction, as one factor for the increasing use of CAM, however, another important factor appeared to be attraction to holistic health philosophy that asks the practitioner to recognize the interconnectedness of body, mind and spirit. Academic institutions responded to consumer interest and most of the medical schools in US and Canada now offer lectures in holistic medicine. Since 2000, the NIH has offered institutions, 5-year grants to develop curricula in CAM. It was realized that addition of proven CAM to conventional medicine would be an improvement, yet this combination alone is not, what could be defined as integrated medicine. In a 2002, national survey in US, it was found that 62% of US adults used CAM within 12 months of being interviewed.

**Integrative Medical Education at the University of Arizona:**

University of Arizona was one of the first to start an IM training program in their academic educational program. Program in Integrative Medicine (PIM), at the University of Arizona was started with the aim to define, develop, implement, model and evaluate excellent integrative medicine educational program.

Since its inception in 1996, the Program in Integrative Medicine (PIM) has grown to include a two-year residential fellowship that educates 4 fellows each year, a distance learning associate fellowship that educates 50 physicians each year, medical student and resident rotation, continuing medical and professional education, an NIH supported research department and an active out-reach program to facilitate the international developments of IM.

**Development of Curriculum:**

National leaders in IM assembled for 2 days to define scope of content and experiences to be included in an integrative medicine curriculum. Input for the curriculum also came from other physicians,

nurses, psychologists, educators and CAM practitioners from around the US. This led to the development of initial curriculum.

**IM Program at Arizona University: The residential fellowship program:**

A 2-year residential fellowship program is conducted. Four physicians are selected each year to participate in the two-year residential fellowship. The background of fellows admitted were from-family practice, internal medicine, emergency medicine, obstetrics and gynaecology, radiology and primary care trained.

The curriculum is divided into 3 didactic and 4 process sections.

The didactic section includes:

- philosophical foundations,
- life-style practices and
- therapeutic systems & modalities.

The process section includes:

- clinical integration,
- personal development and reflection,
- research-education and
- leadership.

**Clinical Integration- Putting theory into Practice:**

Fellows seek to develop authentic relationship with patients. Listening skills, interaction skills, and motivational skills are highly valued.

**Purpose of Fellowship Program:**

The purpose of fellowship program was to develop leaders who would continue to influence the field of IM in particular and medicine in general. The leadership training prepares fellows for their future roles as directors, public speakers and researchers.

**Associate Fellowship Program (AFP) at Arizona University:**

It provides an innovative two-year learning experience whose purpose is to train physicians in the clinical practice of IM. This fellowship program was for physicians interested in practicing IM clinically. Associate fellows spend 8-10 hours per week in study, totalling approximately 1000 hours of instruction over the 2-year program.

Physicians in AFP learn about the philosophy, practice and integration of care through an interactive delivery model. Learning methods include:

- reading texts, printed materials, and peer-reviewed journal articles;
- engaging in interactive exercises on the Internet site;
- participating in threaded dialogues (i.e., asynchronous discussions over the Internet) with faculty, CAM experts, practitioners, and other associate fellows;

- completing case studies and clinical scenarios modelled after the PIM patient conference; and
- conducting field trips, interviews, and other activities that emphasize integration of the learning into their personal lives as well as into their practices.

Associate Fellows were drawn from diverse medical specialities, including internal medicine, family medicine, paediatrics, obstetrics & gynaecology, otorhinolaryngology, radiation oncology and pathology. Some full professors and residency directors of academic institutions were in AFP.

**Post-graduate training programs** have been conducted at University of Minnesota, Columbia and Duke by University of Arizona. These programs provide CME credits to Pg's.

**Paediatrics Research Fellowship Program at the University of Arizona:**

PIM at the University of Arizona has also undertaken the training of five paediatrics research fellows (PRF) in IM who are funded by the P50 NCCAM grant for the study of CAM in paediatrics.

**National IM Consortium of Academic Health Centres for IM (CAHCIM):**

CAHCIM of 11 medical schools with active IM program is being formed with the active efforts of Arizona university group which has dean-level support. The goal of this consortium is to incorporate IM education into medical schools and residency curricula, to influence the National Board of Medical Examiners to include questions on CAM and IM, and to be an active group influencing policy.

Outcome of Arizona University experience of IM was summed by Director, Dr. Victoria Maizes that physicians who study and then practice IM experience rejuvenated relationship with their patients. The call to service that draws most doctors to medicine is restored. Patients experience the humanistic and broad-minded medical care.Fellows in PIM are encouraged to develop their own health and wellness during their training by attending to their own diets, exercising, practicing stress reduction, and doing reflective inner work. The word physician comes from the Latin word for teacher. Physicians should be teaching people how to avoid getting sick in the first place, and they can do this most effectively by modelling health for their patients. One of the strongest indictments against the present system of medical education is that it makes it extremely unlikely that people will come out of it with healthy lifestyles. The executive director of the program, Tracy Gaudet, MD, notes that "Every healthy instinct she had going into medical school was extinguished by the time she finished her residency. This must change".

**Duke Centre for IM at North Carolina:**

It is a classic model of integrative care in US. It combines conventional western medicine with alternative or complementary treatment, such as herbal medicine, acupuncture, yoga and stress-reduction techniques- all in an effort to treat the whole person. It offers IM care, however, there is no separate academic educational program being run by the university.

**Overall IM Scenario in US:**

Many IM centres have opened across the US. According to American Hospital Association, the percentage of US hospitals that offer complementary therapies had more than doubled in less than a decade, from 8.6 % in 1998 to almost 20% in 2004, and another 24% hospitals said that they planned to start complementary therapies in future.

To promote IM in US, the Osher Centre and Duke have joined with 42 other academic medical centres including those at Harvard, Columbia, Georgetown and the University of Pennsylvania to form the

Consortium of Academic Health Centres for IM.

**IM Education Program in Australia:**

**College of Complementary Education** (CCE) in Sydney and Melbourne are conducting a 2- year Advanced Diploma of Integrative and Complementary Medicine. This course integrates all major aspects of Chinese medicine with mind-body medicine, nutritional biochemistry and food therapy, body work, aroma therapy, massage and mitochondrial therapy.

The first graduate school of IM has been established at Swineburne University of Technology in Melbourne. This school aims to develop the importance of non-drug medicine and promote health in community.

**IM in Switzerland:**

Switzerland was the first European country to integrate TM into its health system. In Switzerland, the average prevalence of TM use was 49% in 1990. In 1998, it was decided that complementary therapies- anthroposophical medicine, homeopathy, neural therapy, phytotherapy would be covered by compulsory health insurance program, if the service was provided by a physician certified in CAM. Constitutional provision in 2009 has paved the way for the compulsory lessons for medical students, standardization of training and certification in complementary therapies for both doctors and non-medical practitioners, and availability of CAM products in Switzerland.

**Integrated Medicine Diploma in UK:**

National Centre for IM was established at Guy's Hospital, Bristol, UK. This is the only accredited training program currently available in UK for IM. This 2-year diploma offers knowledge and skill in holistic consulting, holistic life style approaches. This program trains in understanding interventions delivered and to more effectively support the patient in prevention and management of long-term and chronic conditions. This is a hybrid program consisting of both online and face-to-face learning.

**The Royal London Hospital for Integrated Medicine:**

The Royal London Hospital for Integrated Medicine (RLHIM) is a centre for evidence-based practice, education and research, specialising in chronic and complex medical conditions in UK.

Their mission is to provide a person-centred, holistic approach, including self-care, in order to help people with chronic and complex medical conditions live well and feel better. Clinical approach considers the whole person and their environment, in the quest for optimal health and wellbeing. In order to achieve this, they provide a combination of lifestyle strategies, medical, physical and psychological treatment, as well as advice on safe and appropriate use of complementary therapies. They also deliver and encourage self-care approaches which can continue to be used by patients after discharge.

All RLHIM services are outpatient-based and are staffed by experienced healthcare professionals. RLHIM provides the following clinical services:

- Acupuncture
- Adult allergy service
- Autogenic training
- Chronic Fatigue Syndrome (CFS) Service

- Cognitive Behavioural Therapy (CBT)
- Education department (RLHIM)
- Fibromyalgia syndrome service
- Hypnosis
- Insomnia service
- Integrated Cancer Care Service, Children, adolescents and young adults
- Integrated Cancer Care Service
- Integrated Children's and Adolescent Service
- Integrated Dermatology Service

The RLHIM also provides a Complementary and Alternative Medicine Library and Information service (CAMLIS) that is open to the public; an Education department which runs courses on integrated medicine for healthcare professionals; and a Research department specialising in self-care and integrated medicine approaches to health. There is no academic teaching/training program at RLHIM, but there is an education program for healthcare professionals in the various fields of CAM as listed above.

**Brazilian Academic Consortium for Integrative Health:**

In the year 2019, Brazil established a collaborative network of researchers, universities and teaching & research institutions from all over Brazil to contribute to the quality knowledge and scientific evidence of traditional, complementary and IM. Brazilian consortium will function within the frame work of SDG of the UN 2030 agenda to contribute especially to health promotion and control of non-communicable diseases. All the work was proposed to be aligned with the WHO's 2014-2023 Traditional Medicine Strategy, which aims to support the member states to take advantage of CAM for wellbeing and people-centred healthcare; and promote the safe and effective use of TM through regulations and research, and by incorporating products, professionals and practices into health system. No formal IM education program is being run, however, Fellowship for Paediatrics is planned to be conducted in US under training collaboration.

**Indian Perspective:**

Currently, there is no academic teaching/ education program of IM in the country.

In India, there are two categories of **Traditional Medicine** (TM) practitioners, with 7,88,000 AYUSH practitioners, and an estimated one million village-based AYUSH community health workers. Even there was the prevalent practice of Ayurveda in the family tradition of Vaids, and most of the tribal communities in our country.

However, it is heartening to note that there are robust educational programs running for most of the AYUSH streams in the country under the auspices of university education, conducted by degree colleges in both public and private sector. With this backdrop of educational infrastructure of AYUSH systems already present in an organized manner in our country, the task of integration of AYUSH education with conventional modern medical education becomes quite easy. However, it is a challenging task with a of huge opportunity.

**2. To assess the need and potential of IM courses in the country, blending Ayurveda, Yoga and other traditional systems of medicine with modern medical system:**

**One Nation- One Health System**

Community at large expects medical professionals to be able to provide information and guidance about the quality and therapeutic use of not just of conventional modern medicine but also complementary or integrative medicine, which most patients use at some time or other. Keeping this in mind, there is a strong case for integrating evidence-based CAM knowledge with the modern medicine with a view to benefit the patient. There is enough evidence for the effectiveness of many indigenous systems of medicine (ISM), albeit empirical in majority of cases, and scientific method of experimental medicine in many of them as well. In this backdrop, there is a strong case for **One Nation- One Health System, andIntegritive Medicine** fits into that gap. Now there is a need for a paradigm shift from pathy-based medical-care to patient-centric healthcare.

One health system implies evidence- based integration making the best available healthcare system work in the best interest of people. Starting from integrative medical education, this approach can encourage inter-disciplinary research, person-centric healthcare and promotion of public health, in a manner to ensure the best health for the country-men to contribute to the growth and development of nation, to the best of their abilities.

The Ayurveda and many other traditional systems of medicine in Bharat are based on the holistic system of health, as opposed to reductionist theory of modern medicine. Under the modern system of medicine, the specific disease and organ it affects, become the focus of care, whereas Ayurveda emphasizes on the well-being of whole person. World over, many prevalent systems of medicine have been the back bone of healthcare and they are still practised. People in general, have preference for such traditional systems. In surveys, it has been found that large percentage of population, world over use traditional and complementary systems of medicine. Though data for such traditional and indigenous systems of medicine for Bharat are not available, but we all know it very well that a majority of Indian population have the experience of using such non-allopathic forms of treatment.

Given the possibility of all the allopathic doctors as well as AYUSH physician for the healthcare needs of nation, under the Integrative Medicine, it has the potential to solve the problem of adverse doctor-population ratio as stipulated by WHO. India as a developing country needs to utilize all the manpower for the current need of the nation with immediate effect and plan the future medical education of IM in such a way so that holistic healthcare is taken care of.

We are also aware of the fact that there is a predominant availability of modern medical facilities in the urban locations, which has a pro-rich leaning. The regional imbalance in the availability of doctors is one of the biggest impediments to the healthcare needs of masses. Basic healthcare need of Indian masses are prevention of diseases and promotion of health, primary and secondary care, through a system of medical experts, who may be from any system of medical stream. To meet the sustainable development goals and universal health coverage, Integrative Health System comprising of Indigenous system of medicine and modern medical system of allopathy can work in tandem to ensure this for the vast majority of Indian population. Integration is not merely co-location or co-habitation together in a cafeteria approach of service delivery. It is merger of both without losing their identity by imbibing the best of the two worlds on equal footing, capitalizing on the strength of each of them for the benefit of the patients, who shall be the focus.

The predicted increase in the global burden of chronic diseases (WHO- Global Status Report on NCD's,

2011) is the most pressing reason for developing and strengthening collaboration between conventional and Traditional & Complementary Medicine health sectors. Only it can ensure the universal healthcare coverage, which is essential to achieve the SDG 2030.

Awareness about different systems of holistic health and healing is spreading all over the world. Many countries are including Yoga, Ayurveda, and herbal medicine of China in the modern medicine curriculum in the name of complementary medicine. Main stream medical education remaining as Modern medicine, there is definitely a need to teach the methods of whole person healing of body, mind, and spirit (Prana) in the form of Yoga, Ayurveda, Naturopathy, and Homeopathy. With the rapid increase of NCD's and viral epidemics, there is a definite need to boost the natural immunity through interventions in diet at the energy, mind and body level through exercise, yoga asanas, pranayama, and meditation, may be through Ashtanga Yoga, as proposed by Patanjali. Ayurveda and Homeopathy reset the energy balance and improve the immunity and also induce healing. Therefore, there is a need to coordinate and integrate wherever possible, the modern medicine with other whole person healing methods in medical education.

**AYUSH-based Sciences (Ayurveda, Yoga, Naturopathy Unani, Siddha, and Homeopathy):**

In contrast to the development of Modern Medicine, the traditional systems of medicine and surgery did exist in Bharat and elsewhere in the world catering to the needs of masses. These different systems cannot be disregarded saying that they do not conform to the modern scientific standards based on material sciences only. As the history of medicine testifies, these sciences of health and treatment did very well in catering to the needs of those times. Most of these sciences have the concept of basic 'humors' (matter-energy variants), balance of which was health and imbalance produced diseases. They all believed in the role of mind and matter and environment in the sustenance of health and development of diseases.

When it comes to the history of Medicine in Bharat, Yoga and Ayurveda have been in existence since more than 5000 years and the texts relating to these sciences have been very elaborate and they were responsible for promotion of good health and treatment of diseases. Instances of excellent treatment have been recorded through medicine and surgery during as old a period as that of Buddha and even during the periods of Ramayana and Mahabharata. Though the exact methodology has been lost during the long course of history through various ages due to various reasons. The modern medicine people instead of saying that all these traditional systems are unscientific, they should have had the broad mind to undertake research and prove or disprove the dependability of these systems. Those who are teaching or practicing these systems should also have the courage and perseverance to do research based on clinical results and evaluation of the basic principles on the lines of latest advances in modern sciences of Physics, Chemistry and Biology. The quantum energy and molecular biology thinkers should try to evolve and revalidate the knowledge base of traditional medical systems.

In Bharat, because of its long history of cultural norms, and its involvement with cultures and sciences of other parts of the world, as it stands today, there are many traditional systems which are being practised and taught. With a view to encouraging these sciences, though in a half- hearted way in the beginning, the governments after independence have tried to encourage and develop them. The departments of ISM &H (the Indian Systems of Medicine and Homeopathy) have evolved over a period of 50-60 years, establishing them to serve at least the rural masses through primary care hospitals. In the 9th Five-year plan (1997-2002) the government started the integration of modern medicine with different aspects of traditional medicines. The department of traditional medicine was renamed as 'AYUSH' in the year 2003 and the practitioners of these systems were absorbed in the

NRHM (National Rural Health Mission) in 2005. It is only in 2014 that a separate ministry of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Sowa-Rigpa Tibetan medicine, and Homeopathy) was established to promote research, evaluate and teach these systems through institutions and hospitals with separate wings in the ministry. AYUSH is supposed to form the backbone of the 'Ayushman Bharat Yojana'- the present health scheme to make the best health care available to all vulnerable sections of society. The time is now appropriate to teach the traditional systems of medicine and health, do research to evaluate the principles and results of treatment in coordination with modern scientific principles. Therefore, we are trying to put a proposal to start AYUSH based medical colleges which can take these efforts to logical conclusion and establish them on a solid holistic knowledge base for running an educational program of IM.

**Common Principles in AYUSH Systems:**

The basic principles of most of these systems of traditional medicine are based on the concept of existence of natural energy- based principles (*eg.Vata, Pitta, Kapha,* in Ayurveda), may be with minor variations, which when in balance, ensure health and when in imbalance, result in disease. The Chinese system is also based on similar principles of Chi, Yang, and Yin, which are present in human body and exist in nature in various forms. The interaction of these forces in Nature with those in the human body takes place through our food, physical activity, mental activity and emotional behaviour. All these systems give prime importance to mind and emotions along with their interplay with these forces in human existence.

**Modern medicine practitioners:**

Most Allopathic doctors only work in urban areas. Those who do not join hospitals and nursing homes in cities and towns, set up small enterprises in urban areas where adequate paying clientele is available. NSSO data reveals that only 18 percent of the self-owned medical enterprises were available in rural areas while the rest 82% were reported to be available only in urban areas.

**Educational System of AYUSH in India:**

All the six AYUSH system of medicine in Bharat (Ayurved, Yoga, Naturopathy, Unani medicine, Siddha and Homeopathy) have institutionalized system of education. The country has more than 525 AYUSH medical colleges with an annual admission capacity of 52720 undergraduate students, and 117 of these colleges also admitting 2493 post-graduate students annually. As per the AYUSH ministry data of 2017, AYUSH doctors are a massive force and can augment health care delivery but as shown earlier the products of those systems and particularly Ayurveda, are not engaged in rural practice. There are at present over 7.88 lakh registered 'AYUSH doctors available in the country. Assuming 80% availability, it is estimated that around 6.30 lakh AYUSH doctors may actually be available for service. AYUSH doctors considered together with allopathic doctors, it gives a doctor-population ratio of 1:868 practicing in India. This seems to be single most important factor for integrating various systems of the healthcare in the country for the health need of population. Further, the estimates based on National Sample Survey data suggest that the density of AYUSH practitioners is 7 times higher in urban areas compared to rural areas, where the mean density of AYUSH practitioners per 10,000 population happens to be only 0.2. This rural-urban mismatch in availability of AYUSH doctors as well allopathic doctors may be corrected if a strategy of monolithic integrative medicine physicians is pressed in the service of nation by academic, administrative and regulatory means.

At the 65th World Health Assembly (2012), the WHO Director General stated that "Universal Health Coverage (UHC) is the best way to cement the gains in previous decades". The purpose of UHC is to

ensure that all people have access to promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that they do not suffer financial hardship when paying for these services. UHC is also closely connected to achieving the "highest attainable standard of health" outlined in WHO's Constitution and in the concept of Health For All. Many factors inside and outside the health system contribute to achieving UHC: socioeconomic determinants external to health systems, and health system improvements such as good governance, increased availability and appropriate distribution of appropriate types of health workers, availability and distribution of essential medicines and health facilities, high quality of care, appropriate financing, reliable information, etc.

The path to UHC must overcome existing barriers facing individuals when accessing health-care services such as the fragmentation of health-care services and their lack of patient-centredness. Health services may be too distant (geographical barrier), or poorly staffed with long waiting hours (organizational barrier), or not coherent with people's cultural and gender preferences (cultural barrier). Moreover, even when the population is able to access services, they may be of poor quality or, in some cases, even harmful. Another paramount problem is the predominance of curative, hospital-based,disease-oriented services, which are often poorly integrated into the broader health system. These top-heavy services are responsible for huge inefficiencies that could be redirected towards achieving universal coverage. Instead of these existing barriers, qualified T&CM could be a positive contribution to universal health coverage. UHC is one of the important pillars of SDG 2030.

**Integration:**

Integrative medicine involves using the best possible treatments from both traditional and allopathic medicine based on the patient's individual needs and condition. This selection should be based on good science and neither rejects conventional medicine nor uncritically accepts traditional practices. It integrates successes from both worlds and is tailored to the patient's needs, by using the safest, least invasive and most cost-effective approach while incorporating a holistic understanding of the individual.

The best place for medical and health professionals to accrue knowledge is at the university during their academic training programs. The best advantage educational institutions possess is the close relationship that exists between research and teaching. In academic institutions, students are better engaged and inspired by research-led teaching especially which form the foundation of clinical practice. Therefore, academic teaching cum research institutions in their framework engaged in collaborative research to prove or disprove the existing knowledge and creating new knowledge for future need of healthcare can best be undertaken under precincts of teaching and training institutions.

Research also suggests that complementary and alternative medical education may teach modern medicine practitioners' greater self-awareness and improved core competencies, such as, evidence-based practice, enhanced cultural proficiency, and patient-centred care.

A number of medical schools in US in are willing to integrate CAM into modern medical education. The experience at Georgetown University School of Medicine in US indicates that integrating CAM into the curriculum helps advance several goals of modern education, such as critical analysis of evidence, ability to manage stress, build compassion and empathy, improve treatment outcome, as well as raise students' satisfaction and skillto cope with medical education.

A recent report from the Institute of Medicine (IoM) on CAM usage in the US, could be used as a blue

print, or call for action, elsewhere-

- Student should be taught 'appropriate' medicine which helps patients. The question should not be so much on the method, but on 'open-minded' evidence, safety, and effectiveness.
- Focus should be on the requisite curriculum.
- Create opportunities for interdisciplinary activities and collaborative initiatives with accredited CAM institutions.
- Students should hear directly from CAM practitioners about the philosophy of CAM.
- It is essential that efforts be extended beyond the class room to staff and faculty of the institution, in the form of seminars, continuing medical education (CME) and faculty development classes.
- Include CAM 'experiential' knowledge which may develop an insight into the CAM understanding.
- Familiarize future physicians and patients with CAM and effective benefits of holistic, **integrative medical education,** care and treatment.

Taking all the above factors together for the comprehensive holistic healthcare in the country, there is a very strong case for Integrative Medical Education for Bharat to train an integrative Indian medical physician for the future healthcare need of the country. It is also imperative to emphasize that the physician of tomorrow, should have the knowledge of the indigenous systems of medicine (ISM), because they know that their future patients are going to be using them.

With reference to healthcare needs of our nation and the inclusion of ISM in UG modern medical education, following factors highlight the rationale:

- Wide spread use of ISM by patients and their use is projected to increase over the years
- A majority of ISM users continue to use allopathic medicines, creating potential safety/risk due to drug interactions
- Only a minority of patients disclose their ISM use to their physicians
- Patients desire to get information about ISM from their physicians
- A scientific rational mind does not accept the current practice of AYUSH streams readily. Hence 'seeing is believing' is the paramount method through which this realization can take place. Unless the medical students see for themselves the cure occurring from rational selection process of this so called 'irrational'* medicine of homeo-pathy or Ayurvedic concoctions prepared in a holistic manner, having positive health outcomes.
- Growing evidence base for many ISM therapies based on the modern research
- Low cost involved for the ISM therapies vis-à-vis modern medical treatment
- Many physicians trained in modern medicine are seen to be using ISM for themselves and their family. It was observed by a modern medical physician trained in CAM, "To be good healer, we need to facilitate our own wellness".
- Need to integrate the teaching and practices of both western and AYUSH streams of healthcare

is also justified on the ground that both the systems have huge gaps in meeting the health needs of a vast country like Bharat, where people have faith in their own ISM as well as western system of medicine, and aspire to have best of both systems under the care of well-trained medical fraternity.

- Holistic nature of many of ISM makes them a preferred choice by most of the patients and many of the modern medical practitioners.

The above factors make it pertinent to integrate ISM with the modern medical education.

* 'Non-rational' method of preparation of Homeopathic medicines in the form of ultra-dilution and administration renders the system as, akin-to-placebo, as commented by many modern commentators and, which have been widely criticised upon, in the international medical press and journals. Though many recent research point out to the mechanism of action of Homeopathic dilutions in vivo- and vitro- studies. Clinical studies have shown the efficacy long ago.

**3. To assess potential pathways for job opportunities, career progression and demand of future graduate and post-graduate professionals in Integrative Medicine:**

Doctors trained in IM, may be employed in health and wellness centres (HWC) of PM-JAY which are going to be approximately 150, 000 in number to take care of IM services and holistic health of the masses. Given the need to have 2 such trained doctors at each centre, we will require at least 300,000 such professionals in near future for HWCs alone. It could be AYUSH doctors trained in IM with a training module of modern allopathic medical stream, or vice versa.

Physicians of both stream with postgraduate qualification may be absorbed in CHCs and district hospitals, which may require an additional 50,000 doctors with a training in IM, if we plan to have at least 2 of them at eachsecondary level government hospital initially. District hospitals will require larger number IM physicians.

IM trained medical faculty will be involved with running the UG and PG programs and offering clinical services to the patients seeking such services and. They will be actively involved in collaborative research as well.

Unless we link the job prospect for the IM graduates in government sector, medical colleges and public hospitals, the rapid development of IM in the country will not take place. Pay and promotion should be at par for all such trained IM physicians and faculty viz a viz modern medicine doctors.

With reference to job prospect of such doctors of IM, they have to be given an opportunity to serve in the public hospitals. Details of job opportunity and employment pathway is discussed elsewhere in this document.

**4. To outline the broad principles and content of curriculum for such courses (including teaching-learning strategy, immersive training, pedagogy and assessment etc) grounded in the Indian context:**

**INTEGRATIVE (HOLISTIC) APPROACH FOR MEDICAL EDUCATION AND TREATMENT**

Integrative approach in treatment consists of two aspects- Coordination and Integration (***Samanvay*** and ***Samagrata***). Coordination consists of complementing different systems in health, prevention of disease and treatment. In treatment again, it can supplement the measures to enhance immunity,

prevent side effects of treatment as in cancer chemotherapy, and in rehabilitation during recovery following medical or surgical treatment through modern medicine. Integration is in treatment at energy and mind level, particularly through Yoga. All these things refer to integration and coordination between modern medicine and AYUSH systems.

Another means of integrative approach is between the AYUSH systems themselves, since all of them believe in the role of mind and energy (*Prana* or Vital force) in the causation of disease and healing. Yoga therapy and Naturopathy can be coordinated with Ayurvedic and Homeopathic treatments for better and quicker results. All these therapies can be assessed through investigations which are modern medicine based- biochemical, serological, microbiological, and imaging sciences. Every big modern medicine hospital should have sections of Yoga and Naturopathy, Ayurveda, Unani, Siddha and Homeopathy, to give a choice of treatment for the patients, and also to facilitate cross consultations, treatments, and joint clinical meetings. These facilities gradually develop a better understanding between doctors giving treatments through different systems since they exist under one roof.

In medical education, there is a need for total integration from the very beginning of their education and training program, for which there need not be separate new integrative medical colleges, but there should be compulsory integration in thinking and training right from the beginning, as suggested in this article, in all the existing medical colleges of modern medicine. Post graduate courses should no doubt be individualized and specialised in specific systems to promote excellence in learning and research. But a training program to have an open mind at the graduate level of learning paves way for cross consultation between different system specialists also, particularly when there are combined clinical meetings and conferences on specific diseases.

In the modern medical education of IM, there should be a total of 10 semesters of 6 months each for graduate training and 1 year of internship training (2 semesters of 6 months). Effort should be at integrating AYUSH as a whole, and a major exposure to one of the AYUSH system, which has a strong presence in that campus.

Every medical college of modern medicine should develop one of the AYUSH streams for core competency and education of undergraduates. This AYUSH stream will be aimed at teaching, training, clinical practice and collaborating research, at the level of UG, PG and doctoral research.

The proposed integration model will be at the beginning of this IM system, for future healthcare needs of Bharat. The progress of this IM education program should be reviewed after 5 years. If this proposed integrative model develops satisfactorily, there should be establishment of one more AYUSH stream in each allopathic medical college in the next 5 years, and UG students of modern medical education should be trained in two streams of AYUSH at UG level, alongside the modern medical education of western medicine. This integrative model should be strengthened, nurtured and supported for the future healthcare of Bharat.

During clinical training program, graduate students should be exposed to joint IM clinics from 4th Semester onwards. During internship training, UGs should be actively involved with the clinical management of patients and monitoring their progress and overall therapeutic outcome with reference to safety and efficacy of therapy.

**“Proposed Model of IM Undergraduate Training Program”**

**GRADUATE COURSES IN MODERN MEDICNE: (Total 10 semesters of 6 months each)**

**PART ONE: Preclinical, 3 semesters:**

a. Anatomy

b. Physiology

c. Biochemistry

d. Medical ethics

e. Ashtanga Yoga (theory and practice)

f. Principles of Yoga, Naturopathy, Ayurveda/Siddha/Unani, Homeopathy

(Examination at the end of 4 semesters)

**PART TWO: Para-clinical, 3 semesters:**

a. Pathology

b. Microbiology

c. Pharmacology

d. Medical jurisprudence

e. One of the AYUSH systems from Ayurveda/ Siddha/ Sowa-Rigpa/ Naturopathy/Unani/ Homeopathy to be taught as a core strength of the particular medical college (Both didactic and clinical-bed side). Every allopathic medical College to establish the institute of one of the AYUSH system, and integrate it in the educational program of that particular medical college, as discussed above).

f. Experiential learning of Yoga (one session of two hours per week; both theory and learning by doing).

g. Promotion of positive health, Preventive and Social medicine (Every student taught about the healthy eating habits, regular exercise/ yoga; to be made the part of student's part of routine habit).

Examination at the end of 2 semesters)

**PART THREE: Clinical, 4 semesters:**

**MAJOR SUBJECTS:**

a. Medicine

b. Surgery

**MINOR SUBJECTS:**

c. Obstetrics and Gynaecology

d. E.N.T. and Ophthalmology

e. Orthopaedics and trauma surgery

e. Yoga therapy (BKS Ayengar's and Ashtang Yoga of Patanjali)

f. One of the systems of AYUSH to be taken up for didactic and clinical bed side training

(One of the systems of AYUSH to be taken by every student as a compulsory from Ayurveda, Unani, Naturopathy, Siddha, Homeopathy)

**ULTRA MINOR SUBJECTS:**

g. Psychiatry, Radiotherapy and Radiodiagnosis, Physiotherapy and Rehabilitation

(Examination at the end of 4 semesters)

**PART FOUR: Practical training, 2 semesters (Internship):**

a. Residential internship (for Medicine, Surgery, OBG, - 2months each) -one semester

b. Rotating internship - one semester

1. Emergency room - one month
2. Trauma and Orthopaedics - one month
3. E. N.T. - One month
4. Ophthalmology -one month
5. Yoga therapy (BKS Iyengar's Yoga therapy) - One month
6. ehabilitation and Supportive therapies including palliative therapy - One month

(Certification of MBBS at the end of 2 semesters)

This syllabus enables a Modern Medicine student to have a thorough knowledge of their subjects and a good grounding in Yoga with a basic knowledge of principles of other systems AYUSH so that the doctors have an open mind towards other systems. The student should have access to the hospital training, communication skills through workshops from Part Two stage onwards. They should have compulsory attendance at the respective clinical meetings during internship training programme.

Use of Technology including e-class and virtual platforms, simulation methods and use of video for teaching techniques of clinical procedure should be incorporated in the IM education. Competency based education and experiential learning as a method of pedagogy should be employed. Project-based and problem-based learning should be practised. Group discussion and game playing methods to be encouraged for communication, attitude and ethical behaviour training and emotional concomitant of empathy to be inculcated in the **Integrative Indian Medical Graduate**.

Multi-varsity concept and use of technology for course instruction by best teachers in the country for larger student population be planned.

SWAYAM and Coursera type of courses to improve the utilization of expertise for teaching to be developed in the larger interest of students.

**To Inculcate the Bharatiya Ethos and Relevance for Modern healthcare Needs of nation, following important point are listed below, for incorporation in the system:**

1. To continue the efforts of contextualisation of Medical education with the current health needs of society, where patient-centric medicine is to be taught and practised.
2. To evolve a complete '**Bharatiya Model of Medical Education**'–with well-defined purpose,

policy & structure, content and pedagogy is required & which is most suited and applicable to our own context.

3. To expose students at an early stage to clinical side for skills (competency-based) and to understand practical aspects of theoretical knowledge for both modern medicine and AYUSH system to train New Indian Medical Graduate of Integrative Medicine.

4. To evolve a mechanism of giving Students, a task of adopting a slum/ village/area where they can design a health project as per community requirements and show change which is measurable. This should be a credit project and a group activity. Students will be given credit on the basis of health improvements of community/families under their care.

5. To strengthen MBBS in terms of skills, standards and standing in community. Family medicine or concept of family physicians should be revived. Dying art of clinical medicine should be revived and desired skill of clinical expertise should be encouraged, both in modern medicine and AYUSH system chosen.

6. To expose students to research right from the beginning to develop an empirical temperament. A proper repository of research areas, knowledge resources and lessons learnt to be developed at the institutional level with contributions from all the participating experts and students. A central cloud based and back up data base to be kept at a central place, like on the model of **Research for Resurgence Foundation**, Nagpur. Central government additional financial grant, based on the performance of this activity at the medical institution should be implemented.

7. There is a need to, holistically look at the life of a student and not to be limited to classroom activity with 9 AM-5 PM approach. This includes a complete daily routine both at hostel and the classroom to field work. Educational ambience is most important factor in the man-making aspects of professional courses, hence a 24x7 approach towards learning process to be developed at all levels of university, institute, which should be documented and the changes observed to be reported to medical education department and regulatory bodies. Based on the outcome of such measures, recommendations to be sent to the state and central government and regulatory authorities.

8. To appropriately incorporate a positive health outlook by enhancing the contents on component, like nutrition-education and also focusing on healthy life style for the students and education about lifestyle related diseases. The physician's own lifestyle should be motivated to be a role model for society and for his patients.

9. To develop our own Bharatiya standards of physiology and pathology based on empirical study of the Big data available in our large health delivery system. Based on these standards and our nation-centric requirements appropriate pedagogy can be evolved.

10. To comprehensively inculcate the purpose of Medical Education by enlisting the **'Educational outcomes'** at four levels of:

    i. Indvidual,

    ii. social,

    iii. national and

    iv. knowledge contribution;

- According to the Bharatiya ethos of achieving the ultimate goal of a healthy humanity- "सर्वेसन्तुनरिामया:".

11. To increase the use of Bharatiya languages in various medical, para medical and nursing education at all levels of medical education. This may gradually evolve into a possibility of having complete course in Bharatiya languages medium. This will give an opportunity to students from rural/remote regions who are motivated to serve the ailing humanity to pursue the medical education, who are many a times denied the admission due to linguistic barriers. Also, it has been seen that doctors communicating with patients in their native language is more satisfying to patients and physicians alike.

**ASSESSMENT METHODS:**

Both summative and formative assessment should be undertaken. Both Objective Structured Practical Examination (OSPE) and Objective Structured Clinical Examination (OSCE) methods of evaluation should be undertaken.

Following traits should also be evaluated for IM graduates (may be subjective or objective, which can be decided after deliberation).

1. Compassion to the sick and suffering
2. Humility and soft spoken in communication with the patients and attendants
3. Ethics and morality
4. Bed side manners and OPD etiquettes
5. Personal and social observances of the student with regard to 1st two arms of ***AshtangYog (YAM and NIYAM).***

**Other Suggestions from the few individual members of the group:**

1. Few members were of the opinion that UG curriculum should be trimmed. They suggested that unwanted contents of curriculum which are continued for a prolonged period of time, but have lost relevance in today's context should be removed. New health issues, which are relevant for the healthcare need of the day should be added, with care to not making curriculum very heavy. There is certainly not much focus on the nutrition and physical exercise, in the current day of medical education, which is very much required.
2. Bridge courses for existing in-service doctors in healthcare facilities and faculty of both modern medicine medical colleges, as well as, AYUSH teaching faculty.
3. Integration at top level starting from regulatory bodies to apex institutions to lower order teaching and non-teaching establishment must be undertaken.
4. Pharmacy colleges must be opened in all the institutions, to have an integrative approach for drug development including, natural products, herbal preparations, mineral products and their uses by the students of all the pathies, undergoing training in those IM Institutions/colleges.
5. Nurses trained in these IM Institutions must be trained in many clinical work/ procedures which nursing personnel of our country have not been doing and their counterparts in western countries do regularly for smooth functioning of the system, like giving anaesthesia, stitching,

dressing, care of new born, public health etc., so that they can be better integrated in the Integrative Healthcare.

6. Short-term courses of 1-3 months for ASHAs, multipurpose health workers, etc. for the basic knowledge of health-disease with an integrative point of view; like healthy life style, 1st Aid, BLS, *GhareluChikitsa*, family planning, nutrition and balanced diet, hygiene and sanitation, safe drinking water, yoga etc.

**5. To suggest the models of institutional arrangements required for teaching schools/ colleges in terms of departments, faculty, infrastructure, clinical services and academic governance etc.**

I. First and foremost, an **All- India Institute of Integrative Medicine and Holistic Health** (AIIIMH) should be established to develop a future role model institution for IM education, clinical practice including public health and research. It will define the standard of IM education in Bharat. Experts and leaders drawn from modern medicine, AYUSH, management experts, policy planners with commitment to develop an institution of eminence in IM should be full time involved in this endeavor from the very beginning. They will recruit the experts from across the country and outside in this institution. They will go for treasure hunt and invite the dedicated persons of eminence in various fields of medicine, who have dedicated their life for healthcare with an ideal of service to ailing humanity and nation. Experts of traditional indigenous medicine without the formal education and degree may also be invited to be faculty. Their ideas and expertise will be utilized for treatment of many chronic incurable diseases where there is no cure in sight, and their ideas will be put to research in a modern sense of clinical scrutiny.

II. All states of country should have an All-India Institute of Integrative Medical Education, on the lines of New AIIIMS being opened across the country. There are two possibilities to proceed in this direction.

A). An AIIIM be opened in each state, which will have an Institute of Modern Medical Education also in the premises, for integrative education, clinical practice and research. Every region of the country has a core area of strength from amongst the Indigenous Systems of Medicine (ISM), that core branch of AYUSH should be developed with a special focus on it.

B). Almost all the states of the country have been given one new AIIMS by central government under PMSSY. Each new AIIMS is also being equipped with a department of AYUSH, but it is a neglected facility in most of them, a poor cousin of Allopathy at the most. This AYUSH facility should be supported and nurtured with extra care to bring it at par with equal footing of Allopathic sibling. One such institution should be established in any remaining state, where it has not been done so far. New AIIMS, planned must have a wing of AYUSH on equal footing to develop them into institution of Eminence for scaling the heights of academic, clinical and research excellence. It should be aimed to develop them as a model institution for Integrative Medical Education for other institutions in the state.

All the existing medical colleges of modern medicine should be given the task to establish one institute of AYUSH on their campuses, which will have the faculty for teaching and training of UG students. They will run the clinical services in those colleges and will be actively involved in collaborative research.

Joint clinics of OPD services and IPDs will be conducted in such new system of institutional arrangement. Experts of alternative systems (Modern medicine vis-a-vis AYUSH) will have a joint clinical round in the wards and participate in case discussion to decide about the alternative strategy

for management, particularly for chronic and incurable diseases, in an objective manner.

Similarly, AYUSH institutions should open an institute of Modern Medicine, which will be planned to be developed as **Institute of Integrative Medicine**, subsequently. Similarly, all the medical colleges of modern medicine (Allopathy), where AYUSH education are started should be planned to be converted in the Medical Colleges or Institutes of IM. It may be given an incubation period of 5-10 years.

Short-term training of 3-6 months duration for all Allopathic doctors in service and willing to join public health system of country to be undertaken, to orient them in system of IM. Their teachers will be drawn from both modern medicine and AYUSH systems, and training conducted in both Allopathic medical colleges and AYUSH medical colleges of eminence. AIIIMH may start a one/two- year diploma in integrative medicine forthwith, for the healthcare needs of nation. Doctors with such qualification or training may be absorbed in the healthcare system of country on priority, and may be in leadership roles.

**Academic governance:**

Head of these, newly structured institutions should be from amongst the faculty of modern medicine and second in command will be from AYUSH system. Similarly, AYUSH institutions developing modern medicine facilities to be headed by AYUSH faculty and second in command to be from the stream of modern allopathic education field.

**At UG level:**

In the modern medical education system, students of UG courses may be offered an optional Honor's Course or Majoring in one of the AYUSH streams, to pursue a higher level of competence. Those with **'Honor's degree'**, may be permitted for Masters course in that particular stream of AYUSH system of medical education.

One member was of the view, to start specific Rural and Tribal medical education programin the country.

i) Bachelor of Rural Medicine and Surgery, and

ii) Bachelor of Tribal Medicine and Surgery.

These courses should admit 90% of students from rural/ tribal areas. Such colleges should be located in rural and tribal regions. Students should be asked to submit a bond to serve in those areas. To manage these graduation courses, a regulatory body consisting of members from Ministry of health and AYUSH, apart from a member each drawn from Rural Ministry/ Tribal development ministry; under the Umbrella of National Education Commission or National Medical Commission. They will aim at integrating the Modern medical education with the ISM and Tribal systems of medicine.

**At PG level:**

The post-graduate medical education to continue, the current system of PG education in Modern Medical Allopathic institutions. After successful completion of 5-10 years of IM education program in the country, new arrangement of PG education to be deliberated considering the new reality and future healthcare needs of the society.

Few members expressed their views that IM education program should be started at PG level first to create a pool of integrative medical education faculty. Subsequently, UG teaching program of medical education be implemented in the country.

**At Doctoral Level:**

Collaborative research between the faculties of Modern medicine and AYUSH to be encouraged. Preferably, a conscious effort to prove or dis-prove the methods of AYUSH system should be tried in a concerted manner at clinical, biochemical and molecular level.

**New Infrastructure for IM Education Institutions:**

**Funds** are to be made available for starting AYUSH department, preferably an Institute of AYUSH in each medical college of modern medicine. Similarly, AYUSH institutions to be supported for starting modern medical education facility in their institutes. Pay parity at all levels between Allopathic faculty and AYUSH faculty should be ensured.

**Manpower** with regard to faculty, nursing staff, technical staff, and support staff is to be created and provision for their salary is to be made.

**Space** for Labs, class room, indoor and outdoor services space and other ancillary facilities like, pharmacy room, *Panch karma* rooms are to be created. Each institution to have a medical herbal garden in the campus.

**Equipment and furniture** requirement have to be planned to cater to needs of expanded infrastructure.

**What will be the shape of Healthcare System of the Bharat with IM: (Though, a separate group is working on the clinical practice, research and public health, who will go into the details, but a brief view is given here):**

The future doctors, trained in IM will be employed in the healthcare system of country at various levels, starting from apex institutions and district hospitals in the first place. They will be the new engine in the paradigm shift in healthcare delivery system of the country. Subsequently, such physicians should be posted to man the CHC, PHC and finally sub centers also.

Meanwhile, existing AYUSH doctors with proper degree may be planned to be employed at each sub center. Two such AYUSH physicians should be posted there, each from different training background. They should be primarily entrusted with the responsibility of Promotive and preventive health, vaccination, family planning. They should also take part in monitoring the safe drinking water, environment and hygiene and sanitation in their area of responsibility.

**For Institutional Arrangement:**

A prevailing thought emerged in group to restructure all the Allopathic colleges as well as, AYUSH colleges into one of the **Integrative Medical College**, which should be the furure of medical education in Bharat.

AYUSH Medical College → **Integrative Medical College**

Allopathic Medical College → **Integrative Medical College**

There was also a view from amongst the group members to develop the integrated medical education in a phased manner. Their view was that **"while undertaking Integrative Medical Education, let us ensure that the medical institutes all over the country, irrespective of the system (-pathy) are encouraged to develop Integrated services first".** There is need to develop 'Principles of Convergence'- how to come together and achieve the goal. Subsequently, Integrative medical education academic courses are started.

**6. To suggest regulatory system to oversee Integrative Medicine Education in the country:**

**Integrative Medicine Regulatory body** for medical education will be required for the implementation of new IM education framework. It has been seen that old guards with old baggage are averse to change, particularly if there is a paradigm shift to be undertaken. There will be a common register for the practitioners of IM.

Meanwhile, existing system of medical education and NMC should be entrusted with the responsibility of implementation of IM education program in the country. A co-ordination sub-Committee be constituted consisting of members from regulatory body of all the existing medical systems of the education in thecountry.

It has also been observed that modern medicine trained doctors are most opposed to any integration with the ISM, and particularly if co-existence or co-habitation with AYUSH is planned. The way IMA and other modern medical doctors lobby opposed the bridge course for AYUSH doctors, was an eye opener, and same trend was seen when AYUSH doctors with surgical training were proposed to be given option to perform limited types of simple surgical procedures. It is also for sure that there is always a resistance against any change. Bigger the change planned, bigger will be resistance. If there is no resistance to new system, probably there is no change happening.

In the existing NMC, a **division of Integrative Medical Education** may be opened, which may be under the Chairman of NMC or may be kept autonomous under the Ministry of Health and Family Welfare, GOI. If a new body is planned,it should be made to work with NMC in close proximity and cross-communication for day-to-day functioning. Representatives of Modern Medicine, AYUSH, Dental, Nursing and para medical etc. may be represented in that division. This division will work in close communication with NMC, CCIM, CCM, Dental Council of India, Pharmacy council and nursing council. Meanwhile a Para Medical Council of India should also be established to streamline the education and training of paramedics in the country and a representative from that too, to be kept in the team.

Finally, National Education Commission at central level may be entrusted with the responsibility of all kinds of education in the country, including medical, technical, nursing etc. It will ensure a smooth functioning system to develop the country with the Bharatiya ethos as the core value. And probably that will be a point when education system of Bharat will come out of the shadow of western influence, and a true Indian system ofmedical education will develop. It will take the best of western knowledge which has relevance for the nation and all the existing Indian knowledge will be made relevant for modern India.

At a later stage, the physicians trained into the Integrative System of Medical Education will man the regulatory body. As, they must have already faced the tremors and tribulations, system of medical education under their guidance will take the final shape as a system of medical education responsive to the healthcare need of Bharat.

**7. To develop an implementation plan for phased roll out of Integrative Medicine education program outlining estimates of infrastructure requirements, capacity development needs and financial resources etc.**

This is the most important component of the launch of integrative medicine education strategy. Brain storming by academicians and administrators with regulatory bodies of modern medicine and AYUSH systems, in consultation with the eminent academicians of all those streams, may chalk out the roll down plan. And, finally policy planners may decide about the details to be worked out.

We are of the opinion that IM is the need of hour, and sooner we implement, better it could be for the health of masses. Proper integration of TCM into national health systems will enable consumers to have a wider choice when they wish to use such services and it has the potential to improve the individual health. Though integration may be of greatest relevance to population living with chronic diseases or, for health promotion, but in most of the circumstances, it may contribute to the treatment of acute diseases as well.

DG-WHO addressed the issue of appropriate integration by stating- "The two systems of traditional and western/modern medicine need not clash. Within the context of primary healthcare, they can blend together in a beneficial harmony, using the best features of each system, and compensating for certain weaknesses in each system. This is not something that will happen all by itself. Deliberate policy decisions have to be made. But it can be done successfully. In few countries like China, TCM have been completely integrated into the healthcare system. In China, for instance, traditional Chinese medicine and conventional/ modern medicine are practiced alongside each other at every level of healthcare service and public and private insurance cover both traditional and modern medicine.

Certain broader issues to be looked into are as follows:

1. An, All India Institute of Integrative Medicine and Holistic Health (AIIIMH), on the lines of AIIMS, New Delhi for modern medicine, should be established to develop into a model institution for Integrative Medical Education and clinical practice, and to define standards. It will also prioritize the research in IM by issuing guidelines and road map.

2. First step for integration could be cafeteria approach, where co-habitation of experts of both TM and modern medicine will work together so that the current love-hate relation is ameliorated for a co-operative, congenial and affectionate working relation to develop. Because education of new experts of IM stream will take time to be available in adequate numbers to serve the huge population of Bharat.

3. A bridge course for those willing for modern medicine doctors in AYUSH and vice-versa may fill the gap as the intermediate arrangement, till the adequate number of trained IM physicians are available, in the country.

4. Salary structure of AYUSH doctors be made at par with Modern medicine doctors. Because utility and relevance to the healthcare need of the country should decide the salary structure and not the stream of education.

5. Higher salary being given in urban areas should be reversed immediately, and rural allowances should be made such that they become an incentive to serve the remote areas, the way it is done for Indian Army. Further, doctors and paramedics and nurses working in remote/rural areas will be required to, travel to urban regions, which will entail a higher travel cost and it should also be compensated by higher salary.

   As everyone is willing to serve in urban regions, and hardly few are willing to serve the remote and rural areas, rural posting should be guided by the principle of making it attractive which is not the choice of majority, currently.

6. Infrastructure in rural and remote regions for housing accommodation, children education, transport, water supply, road infrastructure and safety of healthcare workers should be ensured at all locations for their efficient and optimum performance of duties.

7. Legal and regulatory reforms to be undertaken and steps for equal status, pay-parity and non-discrimination to be ensued.

8. CME for sharing the clinical and research experience to develop a confidence and trust to be done regularly.

9. Experiential learning should be encouraged at all levels.

10. Practice of IM will give a better professional satisfaction as holism is more conducive to our natural instinct of existence.

11. Government and private insurance should fully cover all forms of AYUSH treatment.

With approximately more than 1000 medical colleges of allopathy and AYUSH in Bharat, catering to the needs of modern medical education and AYUSH education, there is no need to open any new medical college in the country, except few apex and model institutions of eminence. Existing medical colleges of modern medicine should employ the AYUSH faculty and vice-versa for immediate roll out of IM education in the country.

Financial support for augmentation of existing infrastructure to accommodate and furnish the AYUSH /modern medicine facilities in the medical colleges must be undertaken as a top priority. However, financial grant from central as well as state government should be allocated to both private and government medical colleges, after a policy decision is taken and method of sharing of burden between the central and state governments are devised. Private medical colleges /institutions did a yeoman service during the COVID pandemic, in close synergy with the government institutions. Further, PM-JAY has also roped in the private medical institutions in a big way, on at par with government institutions. So, private medical colleges may also be considered for financial support to develop the IM infrastructure for the IM education.

All the existing AIIMS-like institutions should adopt the IM education at the earliest after a curriculum and ways and means to implement the same is being worked out. Almost all the states of the country already have AIIMS-like institutions, up and running and few are in advanced stages of construction to be operational soon. To have the parity, all over the country, remaining states and UTs should be given new AIIMS-like institutions.

**8. To outline need for integrative nursing education and sustained scale up of integrative nursing care:**

Nursing education is another very crucial domain of healthcare and integrative nursing care is very much needed. After careful deliberation with nursing council of India and eminent nursing education administrators and academicians, guidelines for the same may be drafted and incorporated in nursing education to bring nursing practices in line with the IM ethos.

There is an acute shortage of nursing personnel in the country. It will be most appropriate to run a nursing school of UG and PG education in the Medical colleges of IM. Nursing students trained in these integrated institutions will be most suited for the integrated healthcare of IM.

Meanwhile, trained nurses of modern medicine nursing colleges may be given a 3- 6 months duration, hands-on attachment to AYUSH hospitals to imbibe the basic work culture of IM. By such exposure, they may learn some nursing skills of importance for use in the IM education institutions and hospitals.

Many of the minor procedures which nursing staff is supposed to do, must be ensured to be performed by them. Most important aspect of communication and art of listening, soft skill including empathy, better nursing-patient rapport, and compassion need to be planned in nursing education of IM.

We invited one expert of nursing education for the video digital, meeting of the education group in one of the virtual meetings. She was requested to submit her views on the subject, which did not reach us, so far.

**CONCLUDING REMARKS:**

From the study of various existing models of IM, it is very much clear that IM has arrived at the global healthcare system. It is the demand of patients that he should be treated in an integrated manner for the holistic health. It is also, in the best interest of physician for his professional satisfaction and also for the best possible outcome.

Many countries in the world are running clinical services of integrative medicine, but mostly in a cafeteria approach, rather in a comprehensive integrated manner. As far as, current status of medical education of IM is concerned, many efforts have been undertaken which are mostly comprised of diploma or certificate programs, or part-time exposure of UG and PG students during the course of their regular training programs. There is no robust UG and full-fledged PG training program being conducted anywhere in the world, though it is very much needed for Arogya of human-kind.

This is an appropriate time for the medical education system of Bharat to start a comprehensive IM education program, combining best of AYUSH with the modern allopathic medical education to train the future physician for a healthy nation. ***Swasthrashtra is samarthrashtra and samarthrashtra is a sashaktrashtra.*** In our endeavour to make Bharat a powerful nation, we need to make new India healthy, and IM is the way forward.

Finally, it is envisioned that **'Integrative Medicine'** becomes the **'Medicine'** of tomorrow.

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