

**ALTERNATIVE MODEL**  
**FOR**  
**UNDERGRADUATE MEDICAL EDUCATION**

**BY**

**Maj Gen (Dr) A S DHILLON (Retd)**  
**MBBS,DPH,MD**

**DEAN**

**INDEX MEDICAL COLLEGE HOSPITAL**

**&**

**RESEARCH CENTER INDORE**

# ALTERNATIVE MODEL FOR UNDERGRADUATE MEDICAL EDUCATION

## INDRODUCTION

- i It is high time for us to have a look  
at  
the **health care delivery system,**  
and  
**medical education system** of our country.
  
- ii We have to consider  
the  
**national needs**  
**the aspirations of our people**  
regarding healthcare  
and  
we have **to** find  
  
**new and radical solutions** to resolve the problem.

we need to provide

a

competent, trained, caring and compassionate

healthcare provider

in the

far-flung rural areas of our country

where

majority of Indians live and work.

- i over a period of time  
Medical Education policy makers  
have focused their attention on  
the  
limitations and deficiencies of  
the  
existing medical education system
- ii efforts have been made  
to  
bring suitable modifications  
to  
make Medical Education  
more relevant  
to  
the community requirements.
- iii These modifications have been  
referred as  
“Innovations in Medical Education”.

## THE BACKGROUND

India constitutes **17% of the world's population**  
&  
**we account for 20% of reported ailments.**

when we have a look at  
**World Health care parameters**  
our share is

<b>Beds</b>	<b>-6%</b>
<b>Doctors</b>	<b>-8%</b>
<b>Nurses</b>	<b>-8%</b>
<b>Community Health Workers</b>	<b>-9%</b>
<b>Lab. Technicians</b>	<b>-1%</b>

## **so far as disease is concerned**

**India contributes to**

**20% of maternal deaths**

**30% of TB cases**

**68% of Leprosy cases**

**23% of child deaths**

**26% of vaccines preventable  
childhood, deaths.**

## **Hospital Bed available**

**World Average Hospital bed availability is  
2.6 / 1000 population**

**In India Hospital bed availability is 0.78/1000 population**

<b>Sri Lanka</b>	<b>2.9</b>
<b>China</b>	<b>2.2</b>
<b>Brazil</b>	<b>2.6</b>
<b>Malaysia</b>	<b>1.9</b>

During last 6 decades,  
India has made significant improvement  
in health care

but

still we lag behind other developing countries  
on some key health indicators,

such as,

i      **life expectancy at birth in India**                      **64.8**  
is  
almost 10 years less than China and Brazil.

ii     **infant mortality**    **58/1000**  
is  
**more than twice** than that of China and Brazil.

in 11th Five Year Plan (2007-2012).

we has set out

ambitious goals for the health care sector

i We have the ambition of  
'health for all' by 2015.

ii India is also a signatory  
to  
the United Nations

'millennium development goals'.

## ‘ Millennium development goals’.

are

- Eradication of poverty & hunger
- Provisioning of Universal primary education
- Promoting gender equality & empowering of women
- Reduction of child mortality
- Improvement in maternal health
- To Combat HIV/AIDS , Malaria ,other diseases
- To Ensure environmental sustainability
  - Provisioning of safe drinking water
  - improvement in sanitation

i Health care delivery system is 'labour intensive' ,

health care manpower planning is important

in order to use

the precious and scarce resources

'judiciously and optimally'.

ii The aim of Health care manpower planning

should be to ensure

that

'right numbers of appropriate personnel

are provided

at

the right time in proper place

for

the delivery of health services.

i Human resource indicators  
provide an over view  
of  
availability of  
  
trained and specialized  
medical, nursing and Para medical personnel in the country.

ii It also gives an idea  
regarding  
'regional distribution' and existing disparities .

**Human resource indicators cover**

**the details of**

- i** 'allopathic doctors,
  - ii** dental surgeons,
  - iii** nursing personnel,
  - iv** **Para medical health manpower'**
- in the country.**

**The number of allopathic doctors  
possessing  
recognized medical qualifications  
and  
registered with various State Medical Councils  
from  
the year 2006 to 2009 are as under:-**

<b>2006</b>	<b>-</b>	<b>6 82646</b>
<b>2007</b>	<b>-</b>	<b>6 96747</b>
<b>2008</b>	<b>-</b>	<b>7 36729</b>
<b>2009</b>	<b>-</b>	<b>7 63928</b>

**It is evident that**

**the trained health manpower generation has been increasing**

as on 31st December, 2009.

**there are 300 medical colleges in the country**

- i an annual intake capacity for the MBBS course  
being **> 34,000**
- ii the annual intake capacity  
for  
**PG Courses**  
is  
over **14000 for General specialties**  
(Degrees and Diplomas taken together)
- iii for the **Super-specialty courses** **709**

- i there are **2164 medical schools** in the world spread over 171 countries
  
- ii With 300 Medical Schools in India, it is **the largest number of Medical Schools any country can have**
  
- iii for the last few years **the avenues of medical education in India have multiplied significantly**
  
- iv the rate of growth of **trained health manpower** is also substantial.

Yet,  
it does not commensurate  
with the  
prescribed ratio of

doctor : population ratio

and

Para medical health workers : population ratio

as prescribed by  
the  
World Health Organization.

the Task Force  
of  
Planning Commission of India  
on

a Health & Medical Education

and

b the Knowledge Commission

have

brought out

the deficiency of trained health manpower

in the domain of modern medicine

is

i 6 lakhs doctors,

ii 2 lakhs dental surgeons

iii 12 lakhs nursing personnel.

- i The issue is not **just limited to the 'shortage' of the health manpower** but **more important issue is 'unequal distribution' of the available , trained health manpower.**
- ii The fact remains that **the requirement of rural health manpower has not been met with .**
- iii The shortage of medical manpower **in rural areas** is evident and the **feasibility of making the medical manpower available in rural areas is difficult.**

**In order to bridge  
the  
numerical gap  
vis-à-vis  
the man power requirement**

**we will require  
almost  
double the number of medical colleges  
in coming times.**

**the reasons**

**for urban , rural disparity in availability of doctors is.**

- i 'urban-centric approach' of the health professionals  
for  
lucrative propositions.**
- ii the urban-centric ethos  
incorporated  
in the present model of  
undergraduate medical education .**
- iii availability of  
modern amenities of life in cities**
- iv better life style , better jobs ,  
more money in cities**

**During the year 1999**

**the Medical Council of India had constituted**

**a**

**Study Group**

**to evaluate**

**the present model of medical education**

**and propose**

**an alternative/innovative model**

**to cater**

**to the rural health care services.**

## WHAT TYPE OF UNDER GRADUATE DOCTOR OUR COUNTRY NEEDS

**“The aim of *undergraduate medical education* is to produce doctors**

- i* who would promote the health of all people**
- ii* who would be socially relevant and responsive**
- lii* who possess appropriate professional competency including ***ethical, social, technical, scientific and managerial abilities.*****
- iv* The graduate doctors should have the *preventative, promotive and rehabilitative abilities* over and above the traditional curative skills,**

*the limitations and deficiencies  
of  
the existing medical education system have been identified*

*and  
efforts have also been made  
from time to time*

*through adoption of  
various kinds of **modifications and changes**  
in the curricular system*

*for  
reorienting medical education*

*to  
make it more relevant to community needs.*

- i**      **The Medical Council of India**  
**is responsible**      **for**  
**maintaining high standards of medical education in India,**
  
- ii**      **During 1997.**      **The Medical Council of India**  
**brought out certain curricular changes**  
**that are**  
**incorporated in the Regulation of Graduate Medical Education**  
**.**
  
- iii**      **the emphasis was**  
**to provide community need based medical education**

- i*** ***While the package of reforms***  
***made the existing medical curriculum more relevant***  
***for***  
***achieving the National Rural Health Mission goals,***
  
- ii*** ***there is need to provide some autonomy and space***  
***for***  
***more radical***  
***alternative models of undergraduate medical education.***
  
- iii*** ***This has been done in many countries of the world,***  
  
***which has lead to***  
***opening of***  
  
***'Community-Oriented Health Science Institutions'.***

## Goals of NRHM

- Reduction in IMR, MMR by 50% from existing level in next 7 years
- Prevention & control of communicable & non communicable diseases
- To ensure Universal access to Public Health Services like  
water , sanitation, immunization, women health, child health
- Access to Primary Health Care
- Population stabilization
- Promotion of Healthy life style

## ***New Proposal***

***A new model has been developed and proposed  
by Dr. G.P. Dutta,***

***The model gives a shift of medical education  
from  
the tertiary care hospital to the community.***

***Under this model,***

***1½ years of the training is centered on a CHC,***

***1½ years is centered on a secondary care hospital,***

***the last ½ year's training is centered on a tertiary care hospital.***

***The philosophy of the model rests  
on the belief that  
a sustainable and effective health care system  
has  
to be located in the community.***

**The**  
**experiments in primary healthcare are urgently needed,**  
**and**  
**Dr. Dutta's decentralized teaching module,**  
**deserves consideration".**

**out of this model**

**ASHA**

**Accredited Social Health Activist**

**Has been accepted by GOI**

**They are already working in villages for NRHM**

**However,**

**Medical Council of India after extensive consultations**

**with**

**Ministry of Health & F.W., Govt. of India**

**decided to take a fresh look**

**at**

**alternative/innovative undergraduate medical education model**

**as**

**proposed by a Study Group in the year 1999**

**The Executive Committee in its meeting held on 1.12.2009**  
**decided**  
**to adopt updated alternative/innovate model as under:-**

## THE NEW MODEL OF UNDERGRADUATE MEDICAL EDUCATION:

### Mission

- i*     **To mitigate** the crunch of available trained health manpower
- ii*    **To cater to** the health needs of Indian rural population

**Basis:**

- i** **Uneven distribution of the trained health manpower in rural vs urban areas of the country**
- ii** **Reluctance on the part of Doctors to serve in the rural areas and villages**

**This had Resulted in ,**

- i** **a perennial crunch of the health manpower in the rural areas.**
- ii** **There was a felt need for an 'alternate/innovative model of UG Medical Education.**

*The proposed model*

*contemplates*

*teaching, training and learning*

*in 3 phases*

*in a “Medical School”*

*located at the district hospital*

*preferably*

*in those districts where there is no medical college.*

## *Nomenclature of the degree*

*'Bachelor of Rural Medicine & Surgery'*

*(BRMS)*

## Medical Schools and their affiliation

The programme  
will be run in **'Medical Schools'**.

The degree of 'BRMS'  
will be conferred by the University

to which

these Medical Schools will be affiliated.

## Qualifying criteria for admission

- i Applicants**  
who have completed their **entire schooling** (primary and secondary)  
and  
passed their **qualifying examination (10+2)**  
  
**from a 'notified rural area' in the concerned district.**
- ii Admissions would be district based**
- iii while**  
**rendering of the services by such graduates**  
**would be in the notified rural area in the state as a whole.**

## Annual Intake

*The permissible annual intake would be 25 or 50.*

## **Norms for District Hospitals for training BRMS students**

*for an annual intake of 50.*

***District hospital  
would have bed strength of not less than 300,***

***of which***

***100 would in Medicinal specialties,***

***100 in Surgical specialties***

***50 for Obst. & Gynae.***

***25 each for Paediatrics & Orthopaedics,***

**For intake of 25,**

***District hospital  
would have bed strength of not less than 150 beds  
of which***

***50 would be in Medicinal specialties,***

***50 in Surgical specialties and***

***30 for Obst. & Gynae.***

***10 for Paediatrics & Orthopaedics each.***

**However,**

**for North East,**

**hilly states and 'notified tribal area' across the country,**

**the requirement would be**

**for the intake of 25**

**100 beds**

**for intake of 50.**

**150 beds**

## Training Schedule

**Training would be 'institutional' in character  
and**

**in three Phases of the following duration:**

**Phase I - 1 year;**

**Phase II – 1 year;**

**Phase III- 1 ½ years.**

**The rotatory internship would be of six months duration.**

**Total duration – 4 years**

## Accommodation

*The campus would be 'Residential'  
with  
accommodation for girls and boys students, and nursing staff.*

## Mode of Teaching

Teaching would be **'modular' in character** at all the levels.

## Curriculum contents

### Phase – I

**Duration : 1 Year**

Curriculum Will Be Module Based & Problem based

**Different modules of**

**methods of clinical examination**

**epidemiological methods**

**Community health studies**

**will be devised.**

**Phase – II**

**Duration 1 year**

**Curriculum will be system based.**

**Medicine - CVS, GI, Respiratory, Urinary, Reproductive Systems, Introduction To Nervous System, Some Infectious Diseases.**

**Surgery – Common Surgical Problems Like Hernia, Hydrocoele, Abdominal Pain, Appendicitis, Head Injury, Male Genital System.**

**Obst. & Gynae - Pregnancy And Its Problems, Gynecological Problems, Family Welfare Services,**

**Paediatrics- Care of New Born, Common Paediatric Problems, Vaccination, School Health Services.**

**Orthopaedics – Fracture And Dislocation, Back Problems, Trauma, Disaster Management.**

**Eye & ENT – Common Disorders.**

**Phase – III**

**Duration 1½ year**

**Curriculum will be Subject based**

**Will incorporate the following subjects:**

- i Community medicine***
- ii Forensic medicine***
- iii Medicine and its allied specialties***
- iv Paediatrics***
- v General surgery and its allied specialties***
- vi Orthopaedics***
- vii Obst. & Gynaecology***

## Curriculum update

- i*      **A standing mechanism will be created for**  
**the periodic update of the curriculum for the BRMS Course,**  
**so as to**  
**make it ‘ timely and relevant ’**  
**To**  
**‘commensurate with long-term’ community requirements.**
- ii*     **Emphasis will be laid**  
**on**  
**various National Health Programmes**  
**and**  
**their appropriate inclusion in curriculum**  
**in**  
**all the three Phases of Study.**

## Competencies to be acquired

Competencies required for **a student to practice**  
after acquiring

the

**“Bachelor of Rural Medicine and Surgery (BRMS)”**

would be

**clearly defined and notified**

**as in the case of**

**Graduate Medical Education Regulations for MBBS.**

## **Scheme of Evaluation**

***An examination will be conducted **at the end of each Phase.*****

***the students who pass the respective examination  
will be  
allowed to progress to the next higher phase of study.***

*Scheme of examination – Phase – I*

<b>Theoretical</b>	<b>Two Papers of 100 Marks each</b> <b>paper I</b> covers the syllabus of I Semesters <b>Paper II</b> that of II Semester	<b>200 Marks</b>
<b>Oral</b>		<b>100 Marks</b>
<b>Practical/ clinical</b>		<b>200 Marks</b>
<b>Internal Assessment</b>	<b>Theoretical - 100 marks</b> <b>Practical/Clinical-150 marks</b>	<b>250 Marks</b>
<b>Total</b>		<b>750 Marks</b>

## Scheme of Examination – phase -II

<b>SUBJECT AREAS</b>	<b>MARKS ALLOTTED</b>		
	<b>THEORY</b>	<b>ORAL</b>	<b>PRACTICAL/ CLINICAL</b>
<b>Medicine including paediatric problems</b>	<b>100</b>	<b>50</b>	<b>100</b>
<b>Surgical problems including orthopaedic, Eye and ENT</b>	<b>100</b>	<b>50</b>	<b>100</b>
<b>Obstetric/ Gynaecological Problems and Family welfare</b>	<b>100</b>	<b>50</b>	<b>100</b>

<b>Community Health</b>	<b>100</b>	<b>50</b>	<b>100</b>
<b>Total</b>	<b>400</b>	<b>200</b>	<b>400</b>

**Scheme of Examination Phase – III**

	<b>Marks allotted</b>			
	<b>Theoretical</b>	<b>Oral</b>	<b>Practical</b>	<b>Total</b>
<b>Internal Medicine</b>	<b>Two Papers</b> <b>50X2 = 100</b> <b>I.A. = 100</b>	<b>50</b> <b>I.A. = 50</b>	<b>100</b> <b>I.A. = 100</b>	<b>500</b>
<b>Surgery and Orthopedics</b>	<b>Two Papers</b> <b>50X2 = 100</b> <b>I.A. = 100</b>	<b>50</b> <b>I.A. = 50</b>	<b>100</b> <b>I.A. = 100</b>	<b>500</b>
<b>Pediatrics</b>	<b>One Paper = 40</b> <b>I.A. = 40</b>	<b>20</b> <b>I.A. = 20</b>	<b>40</b> <b>I.A. = 40</b>	<b>200</b>
<b>Obstetrics and Gynecology</b>	<b>One Paper</b> <b>50X1 = 50</b> <b>I.A. = 50</b>	<b>50</b> <b>I.A. = 50</b>	<b>100</b> <b>I.A. = 100</b>	<b>400</b>
<b>Eye &amp; ENT</b>	<b>One Paper = 40</b> <b>I.A. = 40</b>	<b>20</b> <b>I.A. = 20</b>	<b>40</b> <b>I.A. = 40</b>	<b>200</b>
<b>Total</b>	<b>660</b>	<b>380</b>	<b>760</b>	<b>1800</b>

## *Nomenclature of Departments in Medical Schools*

***Anatomy***

***Physiology + Biochemistry***

***Pathology + Microbiology***

***Pharmacology***

***Forensic Medicine***

***Medicine and allied disciplines***

***Paediatrics***

***Surgical and allied disciplines***

***Orthopaedics***

***Obstetrics & Gyanaecology***

***Community Medicine***

## Teaching Personnel

*i Each Medical School will have a full time*

*Principal/Dean,*

*Medical Superintendent,*

*ii Professor/ Associate Professor as Head of the Department  
(in any case not below the rank of Associate Professor),*

*iii Minimum one Medical Officer as assigned faculty.*

*in Pre and Para clinical departments*

*like*

*Anatomy, Physiology & Biochemistry, Pathology & Microbiology,*

*Pharmacology, Forensic Medicine and Community Medicine.*

**iv** *Clinical departments*

*will have two medical officers as assigned faculties like*

*Medicine and allied disciplines,  
Paediatrics,  
surgical and allied disciplines,  
Orthopedics,  
Obstetrics and Gynecology,  
each teaching clinical unit*

*except unit (I),  
which would be headed by HOD of the concerned department.*

**v** *Visiting faculty*

*(not more than 20% of the total faculty strength).*

## Teacher Eligibility Requirements

- \* **– Lecturer**  
**MBBS + 3 years Medical officer ship**
  
- \* **- Assistant Professor**  
**Medical Officer with PG Qualification**
  
- \* **- Associate Professor**  
**Medical officer with PG + 8 years Medical Officer ship**
  
- \* **- Professor**  
**Medical officer with PG + 14 years Medical Officer ship**

**Regular Mechanism for Placement / Promotion:**

- **Assistant Professor with 4 years experience will be promoted as Associate Professor.**
- **Associate Professor with 3 years experience will be promoted as Professor.**

## Age of Superannuation

- ***In Medical Schools,  
teachers **who have retired from existing medical colleges**  
can be  
reemployed until the **age of 70 years** as faculty of these schools only.***
  
- a Teachers from Medical Colleges can go to Medical school  
& teach.***
  
- b Teachers from Medical school can not go to  
Medical Colleges & teach .***

***The teaching experience  
of Medical School will not be recognized for teaching  
in Medical College.***

- Internship
- **The internship will be for a period of six months and will be based in rural set up either**  
  
**at primary health center**  
**or**  
**community health center,**  
  
**district hospitals and tertiary health care centre.**

*The training during internship would be mainly focused on the following:*

- *National rural health mission*
- *Integrated child development services*
- *National health programmes*
- *Maternal and child health services*
- *School health services*
- *Common paediatric problem*
- *Accident and trauma based services*

- *Disaster management services*
- *Medico legal problems*
- *Epidemiological method and common studies.*
- *Common eye and ent problems*
- *Blood transfusion services*

- i** on completion of the degree course  
if the graduates join Govt service  
they will be posted to sub centers in a PHC  
as of now we have  
1 lac 45 thousand sub centers in the country.
- ii** if some one does not want to join the Govt service  
he /she will be allowed to practice in the  
area of PHC to which he belongs/ was selected for training.
- iii** these doctors will not be allowed to practice in Cities
- iv** There will be no avenue for these doctors  
to improve their Qualification  
to ever become equivalent to MBBS.

- **Faculty Development Programme**

- i* **Before starting the undergraduate medical course at least three (3) faculty development programmes should be conducted that would train seventy five (75) prospective teachers.**

**The responsibility of holding three such programmes will be taken up by medical teachers' training center, established in the medical college.**

- ii* **From the second year onwards, at least two (2) such programs will be conducted every year in order to re-orient the faculty members of the innovative medical education model.**

**iii** *The duration of the programme would be of 14 days  
wherein  
each programme will enroll 25 medical officers  
from  
amongst those employed under the state health services.*

## Recognition of the Degree

- *The medical schools would be recognized for the conferment of degree by the concerned State Medical Council or by such authority as would be designated/created for the said purpose by the Govt. of India.*

- **Graduate Registering Mechanism**

- **An appropriate mechanism would be provided for registering BRMS graduates by the States.**

- **Registration would be 'provisional' on yearly basis**

**and**

**on appropriate certification by the designated authority notified**

**to the effect that *the***

***incumbent has rendered one year of rural health service***

**would be renewed on year to year basis.**

- ***Upon four such renewals,  
permanent registration would given at the end of five years.***
- ***The Graduates so registered  
would be  
under the ambit and coverage of  
disciplinary jurisdiction  
of the Code of Medical Ethics prescribed by the MCI.***