

[illegible]

中華民國 90 年 3 月 7 日

醫學教育研討會是台大醫學院每年舉辦的醫學教育活動之一，八十九年度的研討會於四月八日(星期六)假台大醫學院 501 講堂舉行。研討會的主題為“一般醫療臨床訓練之教學與評量 (Clinical Training in Primary Care Medicine, Teaching and Assessment)”，由社會醫學科與一般醫學科共同承辦，並獲得國科會經費贊助。目的在建立一般醫療臨床訓練制度，以加強培育醫師的素質。研討會除邀請國內各大醫學院及醫院醫學教育相關人士共同參與外，也邀請美國及澳洲的專家學者共三人，發表專題演講。

今年報名參加研討會的國內醫學教育界人士共有 112 人，所邀請邀請的國外專家有：美國哈佛大學醫學院國際事務負責人 Dr. Robert K. Crone (President and Chief Executive Officer of Harvard Medical International; Dean for International programs)、哈佛大學醫學院 Pilgrim 健康中心及 Brigham and Women's 醫院一般醫學住院醫師訓練計畫主任 Dr. Jeannette M Shorey Jr.以及澳洲皇家一般科學院醫師訓練計畫新南威爾斯省主任 Dr. Guan-Teik Yeo 三人。

研討會的主要內容在研究一般醫療訓練的定位、重要性及建立本土化訓練制度的主張。研討會在上午八點半開始，首先由醫學系及教務分處主任侯勝茂教授致歡迎詞，接著由美國及澳洲的專家，分別演講各國實施一般醫療訓練的經驗和制度 (Training in Primary Care Medicine in Australia and the U.S.A)，然後由台大醫學院黃水坤教授演講述台灣實施一般醫療訓練之特殊考量，林肇堂教授報告台大醫學院之一般醫療訓練的設計及實施現況。下午的研討會先由韓內兒科診所韓良誠院長，從基層醫療觀點談一般內科訓練，台大醫學院黃冠棠教授從醫院觀點談一般內科訓練，張金堅教授談一般外科訓練，吳美環教授談一般兒科訓練，然後進行分組討論。參加者自由選擇參加“一般醫療訓練實務”或“急診醫學在一般醫療之角色”的討論，接著再集合於 501 討論室，由台大醫學院附設醫院李源德院長主持綜合討論，最後由台大醫學院謝博生院長致閉幕詞。研討會於下午五點十分圓滿結束。

此次研討會的目的在整合對“一般醫療”的定義、內容、施行模式及對住院醫師訓練制度的看法，經由各專科醫師的參予與實務經驗的分享，藉由討論、溝通以達成共識。一如歷年研討會的特色，本年度的醫學教育研討會繼續獲得國內各大醫學校院校院長及熱心醫學教育人士的參與支持，所邀請的國外專家學者也提供寶貴資料供與會人士借鏡引用。研討會除介紹美、澳等國一般醫療(Primary Care)的制度與角色定位、釐定一般醫療訓練之重要性、剖析國內實施一般醫療訓練之現況及特殊考量、發表台大醫學院在過去一年實施一般醫療訓練之成果及經驗外，更藉由分組討論及綜合討論的方式，綜合了國內多數醫學教育先進對實施一般醫療的看法及意見，達成發展一般醫療訓練制度的共識。

研討會除了事先印製研討會資料冊，方便與會者的資料收集及資訊流通外，會後也出版研討會專刊，所獲得的具體成果，對發展一般醫療制度有明顯的提昇作用。

育研討會
療訓練研討會

Medical Education Conference

103nd Anniversary of National Taiwan University College of Medicine

時 間：中華民國八十九年四月八日

地 點：國立台灣大學醫學院基礎大樓 501 講堂 贊助單位：行政院國家科學委員會

主辦單位：國立台灣大學醫學院

承辦單位：台大醫學院社會醫學科、一般醫學科

醫學教育研討會

民國八十九年四月八日

目 錄

●節目表	1
●專題演講	
一、一般醫療訓練（美國）.....Jeannette M. Shorey	5
二、一般醫療訓練（澳洲）.....Guan T. Yeo	6
三、台灣一般醫療訓練之特殊考量	黃水坤 17
四、台大醫學院之一般醫療訓練.....林肇堂	19
●專題報告	
一、一般內科訓練—基層醫療的觀點.....韓良誠	22
二、一般內科訓練—醫院的觀點.....黃冠棠	23
三、一般外科訓練.....	
.....張金堅、陳維昭、林明燦、柯文哲、郭文宏、何明志、蔡孟昆、賴逸儒	24
四、一般兒科訓練.....吳美環、胡務亮	32
●附錄	
一、一般醫療訓練.....謝博生	39
二、The Imperative for the Academic Medical Center and Managed Care Organization Teaching Collaboration	Jeannette M. Shorey 44
●參與者名單.....	51

Medical Education Conference

April 8, 2000

Contents

● Programme	1
● Special Lectures	
1. The Radical Redesign of a U.S. Primary Care Residency Program: Optimize Training for the Work Graduates Will Perform	Jeannette M. Shorey 5
2. Training for General Practice in Australia	Guan T. Yeo 6
3. Special Consideration on The Primary Care Medicine in Taiwan	Shoei K. Stephen Huang 17
4. Training in Primary Care Medicine at the National Taiwan University College of Medicine (NTUCM)	Jaw-Town Lin 19
● Special Reports	
1. The Primary Care Training in Internal Medicine community – based	Liang-Cheng Han 22
2. The Primary Care Training in Internal Medicine hospital – based	Guan-Tarn Huang 23
3. The Primary Care Training in Surgery	Wei-Jao Chen , King-Chang Chang , Ming-Tsan Lin , Wen-Che Ko , Wen-Hung Kuo , Ming-Chih He , Meng-Kun Tsai , Yih-Ju Lai 24
4. The Primary Care Training in Pediatrics	Mei-Hwan Wu , Wuh-lianq Hwu 32
● Appendix	
1. Training in Primary Care Medicine	Bor-Shen Hsieh 39
2. The Imperative for the Academic Medical Center and Managed Care Organization Teaching Collaboration	Jeannette M. Shorey 44
● Name List of Participants	51

節目表

Programme

日期：民國八十九年四月八日（星期六）

Date：April 8(Saturday), 2000

地點：國立台灣大學醫學院基礎大樓 501 講堂

Place：Auditorium 501, National Taiwan University College of Medicine

8:00～ 8:30 報到(Registration)

8:30～ 8:40 致開幕詞(Opening Remarks)

侯勝茂 台大醫學院醫學系主任

Sheng-Mou Hou, M.D

專題演講(Special Lectures)

8:40～ 9:10 一般醫療訓練（美國）

The Radical Redesign of a U.S. Primary Care Residency Program: Optimize Training for the Work Graduates Will Perform

演講者: Jeannette M. Shorey, M.D.

Speaker: Jeannette M. Shorey, M.D.(Director , Primary Care Residency Program , Harvard Pilgrim Health Care / Brigham and Women's Hospital , Boston)

主持人:吳德朗 長庚大學代理校長

Moderator: Delon Wu, M.D., Acting president, Chang-Gung University

9:10～ 9:20 提問(Questions and Answers)

9:20～ 9:50 一般醫療訓練（澳洲）

Training for General Practice in Australia

演講者: Guan T. Yeo, M.D.

Speaker: Guan T. Yeo, M.D.(Acting Executive Director, RACGP Education & Training)

主持人:何曉通 陽明大學醫學院院長

Moderator: Low-Tone Ho, M.D., Dean, National Yang-Ming University College of Medicine

-
- 9:50~10:00 提問(Questions and Answers)
- 10:00~10:30 休息(Coffee Break)
- 10:30~10:50 台灣一般醫療訓練之特殊考量
Special Consideration on The Primary Care Medicine in Taiwan
演講者:黃水坤 台大醫學院教授
Speaker: Shoei K. Stephen Huang, M.D., Professor, National Taiwan University College of Medicine
主持人:王乃三 成功大學醫學院院長
Moderator: Nai-San Wang, M.D., Dean, National Cheng Kung University College of Medicine
- 10:50~11:00 提問(Questions and Answers)
- 11:00~11:40 台大醫學院之一般醫療訓練
Training in Primary Care Medicine at the National Taiwan University College of Medicine (NTUCM)
演講者:林肇堂 台大醫學院教授
Speaker: Jaw-Town Lin, M.D., Professor, National Taiwan University College of Medicine
主持人:林中生 中山醫學院院長
Moderator: Chung-Shen Lin, M.D., President, Chung Shan Medical and Dental College
- 11:40~12:00 提問(Questions and Answers)
- 12:00~13:30 午餐(Luncheon)
- 專題報告(Special Reports)**
- 13:30~13:50 一般內科訓練—基層醫療的觀點
The Primary Care Training in Internal Medicine community-based
演講者:韓良誠 韓內兒科診所院長
Speaker: Liang-Cheng Han, M.D., President, Han's clinic of Internal Medicine and Pediatrics
主持人:陳瑩霖 高雄醫學大學代理校長
Moderator: Eng-Rin Chen, M.D., Acting President, Kaohsiung Medical University

13:50~13:55	提問(Questions and Answers)
13:55~14:15	一般內科訓練—醫院的觀點 The Primary Care Training in Internal Medicine hospital-based 演講者:黃冠棠 台大醫學院教授 Speaker: Guan-Tarn Huang, M.D., Professor, National Taiwan University College of Medicine 主持人:胡俊弘 台北醫學院校長 Moderator: Chung-Hong Hu, M.D., President, Taipei Medical University
14:15~14:20	提問(Questions and Answers)
14:20~14:40	一般外科訓練 The Primary Care Training in Surgery 演講者:張金堅 台大醫學院教授 Speaker: King-Chang Chang, M.D., Professor, National Taiwan University College of Medicine 主持人:沈國樑 國防醫學院院長 Moderator: Kuo-Liang Shen, M.D., Director, National Defense Medical Center
14:40~14:45	提問(Questions and Answers)
14:45~15:05	一般兒科訓練 The Primary Care Training in Pediatrics 演講者:吳美環 台大醫學院教授 Speaker: Mei-Hwan Wu, M.D., Professor, National Taiwan University College of Medicine 主持人:李明亮 慈濟醫學暨人文社會學院 Moderator: Ming-Liang Lee, M.D., President, Tsu Chi College of Medicine and Humanities
15:05~15:10	提問(Questions and Answers)
15:10~15:30	休息(Coffee Break)

分組討論(Group Workshop)

15:30~16:30

一般醫療訓練實務 (第 503 討論室)

**Implementation of Training in Primary Care Medicine
(Room 503)**

主持人(Moderators):楊泮池 Pan-Chy Yang, M.D., Professor, National
Taiwan University College of Medicine
張美惠 Mei-Hwei Chang, M.D., Professor,
National Taiwan University College of
Medicine

急診醫學在一般醫療之角色 (第 504 討論室)

**The Role of Emergency Medicine in Primary Care Medicine
(Room 504)**

主持人(Moderators):林芳郁 Fang-Yue Lin, M.D., Professor, National
Taiwan University College of Medicine
沈柏青 Pai-Ching Sheen, M.D., Professor of
Surgery, Kaohsiung Medical University

16:30~17:00

綜合討論(Panel Discussion)

主持人:李源德 台大醫學院附設醫院院長

Moderator: Yuan-Teh Lee, M.D., Dean of National Taiwan
University Hospital

17:00~17:10

致閉幕詞(Closing Remarks)

主持人:謝博生 台大醫學院院長

Moderator: Bor-Shen Hsieh, M.D., Dean, National Taiwan
University College of Medicine

The Radical Redesign of a U.S. Primary Care Residency Program: Optimize Training for the Work Graduates Will Perform

Jeannette M. Shorey, M.D.

Director , Primary Care Residency Program ,
Harvard Pilgrim Health Care / Brigham and Women's Hospital , Boston

Primary care medicine in the United States has changed dramatically in the past 20 years. The changes have been driven by two powerful forces: 1) substantial medical science and technology discoveries, and 2) our society's demand that rapid escalation in the cost of health care delivery be constrained. The discoveries have compelled a new set of knowledge and skills that physicians must master in order to manage huge quantities of rapidly growing and changing information, and allow them to make clinical decisions based on the best available evidence for effective diagnosis and treatment. The pressures to contain health care costs have fostered the development of new models of health care delivery, wherein the majority of care is rendered in ambulatory settings outside hospitals. Primary care physicians now find themselves at the center of these new delivery systems, practicing internal medicine and coordinating all aspects of their patients' care. This work requires knowledge, skills and values related to teamwork, systems thinking, and leadership that most physicians have not previously needed.

Brigham and Women's Hospital is one of the most prestigious academic teaching centers in

the US. Harvard Pilgrim Health Care has been repeatedly ranked as one of the country's highest quality managed care organizations. These two institutions have collaborated in the graduate training of primary care internists since the early 1970s. The leaders of these two institutions, in 1993, examined the outcome of their co-sponsored Primary Care Program and concluded that the program was not meeting its goal to graduate superb primary care physicians. The majority of training occurred in the hospital, and the most revered teachers were subspecialists. Not surprisingly, then, most graduates choose careers in subspecialty medicine or health services research. The leaders made the same bold decision that you have made here in Taiwan – to redesign the training program, such that the training sites, the curriculum, and the practical experiences provided to the trainees are focused explicitly in the knowledge, skills, and values they will need to succeed as excellent primary care physicians. This presentation will detail why we made these radical changes, the process we pursued to make them, the structure and curriculum of the new program, and the outcomes of the changes.

Training for General Practice in Australia

Guan-Teik Yeo, MBBS, FRACGP

State Director NSW, The RACGP Training Program

Terminology

In Australia, "General Practice" means "family medicine" (in North America abbreviation GP is used interchangeably to mean either General Practice as a discipline, or a general practitioner, GPs refers to general practitioners.

1. Overview of the Australian Health Care System

Some information on the Australian health care system with a particular emphasis on the role of the general practitioner will help create a context in which it is easier to understand the how and why of training in Australia.

The Australian health care system is characterised by a number of important principles, which guide policy decision making:

- Health services are accessible by all
- There is a strong emphasis on primary health care – with the general practitioner playing a key role in first line care and preventive medicine, as well as referral to specialists
- Strategies have been put in place to contain costs – a key government policy is to keep health care expenditure as a stable percentage of GDP
- Clear national health priorities have been agreed between the professions, consumers and government
- Strategies have been put in place for improving overall health statistics in terms

of increasing life expectancy and reducing rates of morbidity for many of the major causes eg. coronary heart disease.

There is a blended arrangement of funding and service provision from the public and private sector.

2. Sources of funding

In 1995/96 total health care expenditure in Australia was around \$41 billion, of which more than two thirds was provided by governments - 44% by Commonwealth (national) government and 22% by state and local governments (AIHW, 1998). In the non-government sector, individuals contributed 17% of the funding, health insurance funds 11% and other private sources 6%.

Health care expenditure in Australia has remained stable around 8.5% of GDP since 1991/92. This is consistent with most major OECD countries, except the USA. Health care expenditure in the USA, which relies mainly on voluntary health insurance as a financing mechanism, runs at over 14% of GDP and is far in excess of other OECD countries. There are of course many reasons for this major difference, but the difference highlights the strengths of publicly financed health systems in achieving

cost containment and ensuring universal coverage.

3. Uses of funding

On the service delivery side, private practitioners provide most medical services, pharmaceuticals, dental and other health professional services. Government funding is channelled through a number of universal programs:

- Medicare, the national health insurance scheme that provides cash benefits for private medical services
- Nursing home care provides subsidies for nursing homes
- Pharmaceutical Benefits Scheme for prescription medicines
- Australian Health Care Agreements ensure free access to public hospitals.

Medicare and other universal programs are funded by a 1.5% levy on taxable income and general taxation revenue.

The main areas of expenditure on health services are the public and private hospitals (36%), medical services provided by recognised medical practitioners (ie. GPs and specialists) (20%), pharmaceuticals (12%) and nursing homes (8%) (AIHW, 1998).

The Commonwealth and state governments have varying levels of responsibility. The Commonwealth government is mainly responsible for funding medical services, pharmaceutical benefits and nursing homes. The Commonwealth and the States share the funding of public hospitals, but the States are responsible for running them. The States are primarily responsible for funding community, public health and some dental services. Dental services are primarily paid for by individuals or covered by private health insurance.

Private health insurance is voluntary. Approximately 32% of the population are currently privately insured. Private health insurance provides coverage for a range of services not covered under Medicare, the largest component being accommodation costs in private hospitals.

Under Medicare, all Australians are automatically covered for medical services provided by medical practitioners on a fee-for-service basis. Medical practitioners are free to set their own fees, but under Medicare reimburses 85% of the set fee. Patients pay any gap between Medicare reimbursement rate and the doctor's fee. Doctors can choose to send their patients' bills in bulk direct to the Government (via the Health Insurance Commission). For patients who visit a doctor who bulk-bills, there is no charge. In 1996/97, approximately 80% of visits to general practitioners were bulk-billed.

4. The medical workforce

In 1996, there was a little over 48,000 medical practitioners in Australia, of whom about 45,000 were practicing clinicians. Around 42% were working in general practice or primary health care (3% were GPs in training) and 42% were in specialist practice (9% were specialists in training) (AIHW, 1996).

5. General Practice in Australia

So what do we mean by General Practice? With the advancements of science, medicine has become increasingly specialised. Likewise, the discipline of General Practice has also become increasingly complex, challenging and demanding. However, it is precisely because of this increasing fragmentation of medicine, that the need for the competent, caring generalists is greater than ever (Kilmartin, 1999).

In Australia, General Practice is usually the community's first point of contact with the health care system. General Practice is defined by the RACGP as that component of the health care system which provides *initial, continuing, comprehensive and coordinated medical care for all individuals, families and communities*, and which integrates biomedical, psychological and environmental understandings of health.

GPs must be able to take responsible action on any problem the patient presents, whether or not it forms part of an ongoing doctor-patient relationship. In the provision of primary care, much ill-defined illness is seen. There is the constant challenge to make an appropriate diagnosis. The practitioner must be able to make an assessment of the person's condition without subjecting the person to unnecessary investigations, procedure and treatment. In managing the patient, the GP must be able to decide when referral to a specialist is appropriate. Incorporating the advice sent back to the GP, the GP is then able to provide further information and support to the patient helping to ensure a coordinated approach by all health professionals.

The GP often sees the patient over many years and is able to draw on this knowledge in providing medical advice. As part of this the GP is able to assist the patient in a consistent way to take steps to promote their health and to prevent disease. With the continuity of care that GPs are able to provide, over time, they are able to ensure that any new condition is viewed in the context of the patient's overall health and in terms of their family circumstances and work environment.

6. The gatekeeper role of GPs

In Australia, the GP plays an important gatekeeper role in the provision of health care to the community. People are free to choose their own GP in Australia. For most people, the GP is the first point of contact with the health care system, and in most cases, the GP will provide that ongoing continuing care for patients over time, whether in sickness or in health.

While access to general practice is open, access to other areas of the health system is generally by way of referral. The GP may make referrals to specialists, other health professionals (such as physiotherapists, podiatrists, and speech therapists) or to community health services (such as community nursing, hearing services, disability services or mental health services). Patients can access Medicare reimbursement for specialists' fees only if there is a referral.

In some cases, GPs may need to refer patients to acute care hospitals, for care either as an in-patient or as an outpatient. Diagnostic tests and radiology tests are usually carried out upon request from GPs where appropriate. In rural hospitals, GPs are often responsible for emergency management and in-patient care at their local hospitals. GPs are also responsible for prescribing people's medications. Recent data indicates that GPs refer their patients to other services in 10.6% of encounters, mainly to specialists, but also to allied health professionals. Very few referrals to hospitals or emergency departments were recorded (BEACH study, 1999)

The gatekeeper role of GPs is recognised as an important role both from the point of view of continuity and whole patient care, as well as from an economic point of view.

7.Reasons for seeing a GP

So why do Australian patients see their GP?

Table 1. Most frequent reasons for seeing a GP¹

Reason for encounter	% of encounters
1. Prescription	8.1
2. Cough	7.3
3. Cardiac check-up	5.3
4. Immunisation	5.1
5. Throat complaint	3.9
6. Back complaint	3.5
7. Upper respiratory	3.3
8. Rash	3.2
9. General check-up	3.0
10. Hypertension	2.4

The BEACH study found that the top ten reasons accounted for about one third of the total number of reasons recorded for seeing the GP. There is a fair degree of similarity with similar studies conducted in Canada and Britain.

20% of the population saw their GP in the preceding 2 weeks (National Health Survey) and 85% attended their GP in the preceding year (Deeble, 1991). With an unsurpassed market penetration, general practitioners are critical to the success of any health promotion / disease prevention campaign.

8.Postgraduate medical training

Australia has eleven medical schools offering 5 to 6-year undergraduate courses in medicine or 4-year graduate entry courses in medicine. Upon completing medical school, doctors must work for 1 year as interns in a public hospital before they can become registered as medical practitioners by the medical board in their State or Territory. Most doctors usually work for another year or so in salaried positions in public hospitals before beginning their postgraduate vocational training.

To train as general practitioners they must be admitted into the Royal Australian College of General Practitioners' Training Program. This is Australia's national and only vocational training program for General Practice. Each year, the RACGP offers 400 new places in the program, or 33% of the annual medical schools' output of approximately 1200 doctors. The Commonwealth government determined this limit. Many believe this number to be too low a replacement for the GP workforce, and that eventually will skew the medical workforce in the direction of specialists (with consequent cost implications).

The government funds the RACGP to run the Training Program. Specialist training programs in other disciplines are run by each of the other specialist colleges, but funding is less visible, being a component of the service provision of public hospitals.

9.Key Features of the Training Program

- **National program** for 27 years. Set up in 1973, the first intake commenced in 1974.

- **Enhanced apprenticeship**, with 1 on 1 supervision that is graded to the stage of training
- **Minimum 18 months in general practice**
- **Training in the community.** According to the principle one can only learn how to swim if one gets into the water, GP registrars should be trained where they would be working – in the community. Training practices are private clinics, run by general practitioners. The Training Program trains the supervisors in educational skills.
- **Regular direct observation.** During the first 12 months of general practice (basic and advanced GP terms), education staff conduct 3.5 hours of direct observation of registrar consultations every 3 months. In NSW, routine observations in the final year, carried out by trained GPs every 6 months, can be substituted with participation in small group learning. In all mandatory workshops, direct observation in small groups by educational staff occurs to check on skills taught in those workshops. Use of trained actors / actresses as simulated patients is routine.
- **Flexible and responsive to registrar needs.**

10. Structure of General Practice Training

Medical graduates can only practice independently as general practitioners if they successfully complete the RACGP Training Program. The RACGP is the only organisation recognised by government for the training of general practitioners. The mission is *training GPs who will provide high quality primary health care services relevant to individual and community needs.* (Training Program Handbook 2000)

The Training Program is essentially a three-year postgraduate program that takes place in hospital and community settings. The first year of hospital-based training can take place immediately after the first postgraduate year and consists of a minimum hospital rotations in RACGP accredited posts. Recognition of prior experience is possible. In line with other speciality colleges, the RACGP is moving to enrol doctors who have completed 2 postgraduate years, ie. PGY1 & PGY2 will be unstreamed.

Hospital rotations

Mandatory hospital rotations include general medicine, general surgery, emergency medicine and paediatrics. In addition, trainees (called GP registrars) must obtain hospital experience in at least 3 other areas that include: anaesthetics, dermatology, ENT, geriatrics, infectious diseases, obstetrics & gynaecology, ophthalmology, orthopaedics, psychiatry, rehabilitation, urology.

While hospital training extends registrars' knowledge and provides a strong foundation relevant to future general practice, experiences from different specialities collected together does not make General Practice. For example, one can gather all the components of a cake – flour, eggs, butter, sugar, flavouring, and baking soda – on a table. That still doesn't make a cake, unless these components are blended together and baked. Thus General Practice is very much the integration of often-disparate hospital experiences.

Basic GP terms

The second and third years of training take place in general practice-based settings. The second year of training includes 6 months of basic general practice terms followed by 6

months of advanced general practice terms. The basic terms are conducted under close supervision by an experienced GP supervisor in the teaching practice.

The RACGP has an Australia-wide network of accredited teaching practices and a large number of accredited teachers. The RACGP pays a practice subsidy and a teaching allowance to supervisors. Practices employ the registrars, and retain the fees of patients who consult the registrars.

The GP supervisor is responsible for ensuring that the registrar obtains suitable clinical experience, for providing practice-based education to the registrar, and for ensuring that the registrar is released for one half-day per week for education activities. Training Program medical educators are responsible for fortnightly or monthly local regional educational releases. They monitor the volume and type of clinical services provided by registrars, time for educational activities, and the quality of the learning environment, supervision, teaching and feedback received by registrars.

These basic terms provide an introduction to community-based medicine and assist registrars make the transition from hospital-based medicine.

Advanced GP terms

During advanced GP terms, registrars consolidate their knowledge of patient care and develop confidence in dealing with less common and more complicated presentations. Supervision during the advanced general practice terms becomes gradually less intensive as registrars learn to deal with cases more independently. There are still requirements for dedicated practice-based education and education release times.

Subsequent GP experience

In the third year of training, or subsequent general practice experience, registrars have an opportunity to operate more as independent practitioners with practising GPs as their mentors. This year provides an opportunity to explore the process issues at a more complex level.

During this year they may choose to undertake up to 6 months in special skills posts where they can gain experience in areas which are important to the health of the community, such as adolescent health, mental health, HIV/AIDS medicine, Aboriginal health, etc. NSW has set up the only HIV/AIDS special skills training position in Australia, as well as the only Public Health special skills training position.

11. Training for Rural General Practice

The RACGP has a commitment to training doctors for practice in rural areas. Registrars interested in a career in rural General Practice can enrol in the Rural Training Stream (RTS) of the Training Program. The RTS is structured in the same way as the regular Training Program. What is different is that the general practice-based terms and in some cases the hospital-based terms are conducted in rural settings. As well as this, the additional educational sessions, the networking and training opportunities (eg. emergency management skills training), are specific to rural General Practice.

RTS registrars can access up to one additional year of training in advanced rural skills. These are available in aboriginal health, anaesthetics, emergency medicine, mental health, obstetrics & gynaecology, paediatrics, procedural obstetrics and surgery. Rural training stream registrars who complete a full year of advanced rural skills training are awarded the Graduate

Diploma in Rural General Practice.

In NSW, 55% of basic and advanced GP terms training occur rurally. Almost 70% of RTS registrars continue to practice in rural areas after graduation, and 15% of the general stream registrars practice in rural areas after graduation. (RACGP NSW, 2000)

12. Mandatory components of training

Registrars must achieve training in:

- **Areas of medical service need (AMSN).**

In the course of their training, all registrars are required to undertake at least 6 months training in areas where the provision of medical services is insufficient. Commonly this occurs in rural areas. However, registrars for whom relocation to rural areas is onerous can train in urban AMSN. These are posts particularly associated with low socioeconomic conditions, where there is a shortage of medical services. These settings provide unique experience in managing health care in situations where resources are often inadequate, as well as insights into the many diverse aspects of future general practice.

- **Aboriginal health curriculum** (refer section 12 on National Health Priorities)

- **Paediatric emergencies**

Registrars must gain experience in child and adolescent health that includes a high proportion of paediatric emergency attendances, to achieve the objective of being able to recognise, diagnose and manage the seriously ill child. This should be achieved prior to commencing the basic GP term.

- **Advanced life support**

In the hospital year, registrars must

complete at least 3 months in an emergency post. Registrars must be able to demonstrate competency in advanced life support, including CPR and defibrillation. Registrars in the Rural Training Stream may have additional emergency skill requirements.

13. Overview of the RACGP Training Program Curriculum

The RACGP Training Program curriculum sets out what should be learnt during the Training Program. It contains details of the attitudes, skills and knowledge that are necessary for competent, unsupervised General Practice. Assessment is directly linked to the learning objectives of the Training Program.

This curriculum was developed after taking into account three key considerations:

- What do GPs need to know? This has been extensively documented within the framework of the domains of General Practice.
- Why do most people seek the services of a GP? Particular focus is given to common patient presentations.
- What are the health needs and priorities of the Australian population? GPs are trained to understand and support the government's national health priorities.

14. The domains of general practice **What do GPs need to know?**

The five domains of General Practice represent the critical areas of attitudes, skills and knowledge, which are necessary for competent general practice. They are relevant to every patient consultation.

1. Communication skills and the patient-doctor relationship;

2. Applied professional knowledge and skills;
3. Population health and the context of general practice;
4. Professional and ethical role;
5. Organisational and legal dimensions.

These domains were developed by the RACGP following a process of extensive consultation between the profession, other health professionals, university academics, consumers and the funders in order to produce the curriculum framework and the curriculum statements (RACGP Training Program Curriculum, 1999).

Within each domain, the College has defined the key learning objectives, the scope and the minimum and essential skills that a registrar can be expected to demonstrate. For example, in relation to 'Communication skills and the patient-doctor relationship', registrars are expected to show an understanding of different consultation models, to demonstrate a patient-centred approach and to foster effective whole person care with appropriate communication skills and attitudes.

In relation to 'Applied professional knowledge and skills', registrars need to be knowledgeable of significant medical conditions and approaches to undifferentiated problems. They must learn how to gather information, conduct a physical examination, undertake procedures and make clinical decisions.

Within the context of 'Population health and the context of general practice', registrars need to understand demographics, epidemiology, public health problems and the health needs of special groups. They need to develop an awareness of the patterns and prevalence of disease and be able to participate in population-based preventive strategies.

The GP's 'professional and ethical role' relates to their behaviour with respect to patients, colleagues and the community. Professional ethics are based on belief systems of the profession and the community. Registrars who are competent in this domain for example will exercise a special duty of care at all times, strive to maintain professional standards of practice according to contemporary ethical principles, be committed to lifelong learning and continuous professional improvement.

GPs who are competent in 'Organisational and legal dimensions' of general practice will ensure that adequate arrangements are made for the availability and accessibility of care, they will have a critical appreciation of practice management requirements, medical records, legal responsibilities and reporting requirements.

15. Common and significant patient presentations

Why do most people see their GP?

General Practice primarily involves providing advice to individual patients in the treatment and management of medical conditions. GPs in Australia manage the majority of medical presentations in the community.

The curriculum should reflect the type of patient presentations that will come to the attention of the GP. The curriculum and training program therefore also include education under the following major headings:

- Problems that significantly contribute to morbidity and mortality;
- Common presentations which exemplify general practice;
- Presentations requiring special skills;
- Health problems which present differently with different groups;

- Presentations with a public health significance; and
- Health problems which have been shown to be preventable.

16. National Health Priorities

What are the health needs and priorities of the Australian population?

The RACGP is responsible for training GPs who will provide high quality primary health care services relevant to individual and community needs. It is important therefore that the Training Program develop registrars' understanding of Australia's overall health needs and priorities.

Australia's national health priorities are based on reducing morbidity and mortality in the six areas where morbidity and mortality are highest:

- Cardiovascular health (smoking, heart and vascular disease);
- Cancer control (the most common cancers in males are prostate, colorectal, lung and skin; whereas, in females, they are breast, colorectal, skin and lung cancers. The major causes of cancer death in males are lung cancers and in females breast cancers);
- Injury prevention and control (6% of all deaths in 1996, it is the main cause of death in children and young adults);
- Mental health (suicide and attempted suicide, depression. In 1996, the incidence of suicide in 20-29 year old men – approximately 33 suicide deaths per 100,000 population – was six times greater than for women the same age);
- Non-insulin dependent diabetes (there are no national estimates for diabetes incidence, estimates of the true prevalence of diabetes

in Australia based on regional data are around 3.7%, which is very high compared to other countries); and

- Asthma (11.3% of Australians reported asthma as a recent or long-term condition in 1995; the incidence is highest in 5-14 year olds where it is 19.2%)

The national health priorities aim to reduce morbidity and mortality in these areas by:

- Reducing health inequalities;
- Improving health care access and participation in decision making;
- Increasing intersectoral action at state and federal levels;
- Promoting healthy lifestyles (such as reduced smoking and alcohol consumption, increased physical activity, improved diet, and reduced cholesterol, obesity and blood pressure).

The learning objectives in the domains of General Practice and the common patient presentations are relevant to consulting with all patients. In addition to this, specific learning areas of the curriculum were developed after taking into account the national health needs and priorities, and the needs of certain population groups (eg. Aboriginal people, women, young people, etc) or aspects of general practice (eg. practice management, critical thinking and research, etc).

Aboriginal Health

The National Aboriginal Health Strategy in 1989 highlighted the urgent need to address the current state of Aboriginal health in Australia. The strategy states "Aboriginals have the worst health of any identifiable group in Australia, they carry a burden of poor health and mortality far in excess of that expected from the proportion they comprise of the total Australian population."

The report highlights the shorter life expectancy of Aboriginal people (around 55 years for males and around 65 years for females). The major causes of death are diseases of the circulatory system (cardiac, high blood pressure), external injuries, and diseases of the respiratory and genito-urinary systems. For Aboriginal children, the majority of deaths are due to infections and parasitic diseases.

The nutritional status of Aboriginals is characterised by child under-nutrition and adult obesity. Body weight is an important factor in the development of a number of conditions among Aboriginals, such as diabetes, high blood pressure and heart disease. Tuberculosis and hepatitis B infection is also prevalent among Aboriginal people.

The Training Program recognises that GPs have a key role to play in improving health services for Aboriginal people and includes a detailed curriculum component, which was developed in consultation with Aboriginal people, to specifically address this issue.

17. Assessment & Fellowship of the RACGP

In addition to satisfactory completion of the Training Program, registrars must successfully complete the College examination before they are eligible for the award of the College Fellowship. Fellowship of the RACGP is the highest academic qualification for general practitioners and confers recognition as a general practitioner and independent access to GP items on the government-funded Medicare system.

Assessment like training is based on the domains of General Practice. Informal assessment currently takes place during training to provide feedback to registrars on progress in achieving the learning objectives of the

curriculum, especially in areas that are difficult to examine. The College is currently considering a more formal in-training assessment process.

The College Examination is the formal summative assessment requirement of the Training Program. The learning objectives of the Training Program are consistent with the assessment matrix, which is used to select the sample of cases used in the examination.

There are 3 components of the Examination

1. **Applied Knowledge Test** assesses the breadth and application of contextual knowledge required for certification to enter unsupervised General Practice. All 160 questions (to be completed in 3 hours) are clinically based.
2. **Key Feature Problems** assess clinical decision making, a "key feature" being a critical step in the resolution of a clinical problem. This is a written component of approximately 25 questions in 3 hours.
3. **Clinical Examination** assesses applied knowledge, clinical reasoning, communication skills and professional attitudes, largely using role-playing patients. There are 15 stations over 3.5 hours.

Candidates must complete all components as a unit, and if unsuccessful in some components, must repeat all components at a subsequent examination (Examination Handbook 2000).

18. New South Wales

This is the largest state operation in the Training Program, accounting for approximately one-third of the training activity nationally, with an annual operational budget of A\$4.3 million (1999).

We have an annual enrolment of 113 registrars, with a total enrolment of

approximately 400. Training is delivered in 9 regions in NSW and involving different collaborative arrangements with Universities, Divisions of General Practice, and Rural Training Units. There are 4 regions in metropolitan Sydney, 4 rural regions in country NSW, and one region that includes urban and rural. Regional education release programs take place in 11 locations face-to-face, with additional teleconference and videoconference teaching.

References

1. Australia's Health 1998. AIHW
2. Bettering the Evaluation and Care of Health (BEACH): A Study of General Practice Activity. AIHW and University of Sydney (Family Medicine Research Unit), 1999.
3. Examination Handbook. RACGP. 2000
4. Medical labour workforce. AIHW, 1996
5. RACGP Training Program Handbook 2000. RACGP.
6. The RACGP Training Program Curriculum, 2nd edition. RACGP, 1999
7. The role of general practitioners in Australia. M Kilmartin, RACGP, 1999
8. Training Program NSW statistics. RACGP, 2000

SPECIAL CONSIDERATION ON THE PRIMARY CARE MEDICINE IN TAIWAN

台灣一般醫療訓練之特殊考量

Shoei K. Stephen Huang, M.D. (黃水坤教授)

National Taiwan University College of Medicine

The fundamental goals of the primary care medicine are 1) to provide convenient ambulatory (or office-based) health care service to the patients, 2) to serve as a gatekeeper for the subspecialty field so as to curtail the loading to the sub-specialists, and 3) to reduce the cost by avoiding unnecessary medical tests and treatment. In a broad sense, the scope of the primary care medicine spans General Internal Medicine, General Pediatrics, Family Practice (or Family Medicine or General Practice), General Obstetrics and Gynecology, and perhaps General Surgery. However, in a strict sense, it should be applied only to General Internal Medicine, General Pediatrics, and Family Practice (or General Practice). Nonetheless, the definition of the panel of the primary care medicine remains quite confusing. In Taiwan, there has been sharp escalation in the number of physicians practicing in the sub-specialty fields and horrendous diminution in the primary care physicians in the past decade. To express the concern and to attempt at reversing the situation, we have begun to examine the application of primary care medicine in Taiwan. However, to adopt the systems of primary care medicine currently exerted in the foreign countries, some special considerations would need to be kept in mind. The factors for consideration include 1) the

traditional culture difference, 2) the national health insurance policy, 3) the existing environment, 4) the incomes of the physicians and the hospitals, 5) the recognition and identity of the primary care medicine by the patients and physicians, 6) the attitude and cooperation of the administrative officers, and 7) the availability of the experienced personnel in primary care medicine. With the understanding of the above factors, it is conceivable that several task forces need to be achieved so that the primary care medicine program can be successfully implemented in Taiwan. Some of these task forces could be painstaking and time consuming. The task forces that may be considered important and feasible include the followings: 1) to first establish identity and recognition of the need and importance of the primary care medicine program; 2) to demand an insurance policy that would require a primary care physician as a gatekeeper for every patient; 3) to subsidize the income and promotion for physicians devoted to primary care; 4) to build more office-based professional buildings rather than building more big hospitals; 5) to curtail the sub-specialty training in each specialty field; 6) to encourage more out-patient care; 7) to strengthen the residency training in General Internal Medicine, General Pediatrics, and Family Practice (in

Taiwan, it is a community-based family medicine) to produce more experienced personnel (physicians, nurses, etc.); 8) to emphasize teaching in primary care medicine in medical school and other associated professional schools; 9) to appoint an independent committee (or a council) to oversee the primary care program; and 10) to wide-scale educate the patients and general population. In summary, after years of overemphasis and overproduction of sub-specialty training in Taiwan, it is time to

rectify the foreseeable tragedy and to seriously and carefully implement the primary care medicine program that must be tailored to the conditions and needs in Taiwan under some special considerations. To this end, a stepwise and integrated reform of the medical education, residency training and the health insurance policy will become essential to ensure a long-term success in the primary care medicine program in Taiwan.

台大醫學院之一般醫療訓練

林肇堂

台大醫學院教授

壹、前言

台灣的醫學教育自戰後以來歷經數十年，無論在課目、課程內容乃至師資養成系統等制度均少有變動。然而，近十年來醫學系醫學教育陸續已出現許多弊端，台大醫學院醫學系遂於 81 學年度開始推動教育改革，實施新課程及小班教學，86 學年度完成課程及教學的轉型。然而，完成上述改革之後，本院在醫學教育方面仍然存在下列缺失：

- (一)醫學系五、六年級學生的臨床教學內容偏重於知識講授，學生實際照顧病患的經驗以及建立良好醫病關係的能力仍顯不足。
- (二)醫學系七年級學生的臨床實習，與上級指導醫師的互動不足，與病患接觸的時間不夠。又因以學生身分執行醫療工作，角色及任務定位不明確，在學生及病患之自主意識高漲的情況下，容易引起困擾。
- (三)附設醫院之住院醫師訓練太早專科化，而且過度細專科化，注重高科技診療而忽視床邊醫療，易使病人遭受不必要的高科技診療傷害並浪費醫療資源。

爲了矯正上述缺失，故有加強一般醫療訓練（primary care medicine）及培育之理想，據此規劃進一步改革。

貳、一般醫療訓練實施現況

台大醫學系自八十七學年度起開始實施「二階段學程」。「二階段學程」的訓練期間共計三年，分爲二個階段實施，第一階段爲畢業前訓練，在醫學系第五及第六年實施，除了整合一般的臨床教學之外，特別強化與「疾病診斷」相關的病史詢問、病徵檢查及邏輯思考訓練，並加強與「病患照顧」相關的訓練，此外，也注重培養主動學習能力及照顧病患責任感。

在第一階段必須修習的科目包括：（1）臨床診療學，（2）內、外、婦、兒科臨床實習，（3）基層醫療臨床實習，（4）其他臨床學科實習。受訓者結束此一階段並通過「基本臨床技術測驗」之後，授與醫學士學位，參加醫師資格考試，取得醫師資格。

本學程的第二階段爲畢業後訓練(Post Graduate Year 1，簡稱 PGY1)，將讓受訓者以第一年住院醫師的身份，在實際負責病患照顧的條件下，整體性地學習全人醫療的診療經驗。第二階段的訓練主要在內外科綜合病房、急診醫學部及基層醫療建教合作醫院實施。

第一階段教學計畫簡介

A. 醫學系五年級

A-1 臨床診療學(一)

一、內容包含放射線學概論、麻醉學

概論及醫學遺傳學三部分。

A-2 臨床診療學(二)

- 一、注重學習病患照顧及診療處置，以重點問題、病案討論方式作綜合性臨床應用的學習。
- 二、以 30 至 40 種常見病例為教材，並以內科病房及外科病房之實際病例印證。

A-3 內科臨床實習

- 一、強調問診、理學檢查、邏輯思考、診療決策等基本臨床技巧的訓練，注重床邊診療及高科技診療之均衡。

A-4 外科臨床實習

- 一、每週於特定之病房分配病患，在主治醫師及住院醫師指導下，學習各類病患之術前檢查及術後照顧方法，包括換藥、鼻胃管放置、及導尿等臨床工作。
- 二、於開刀日至開刀房見習，依分配可刷手上刀，學習手術治療之各種步驟，及縫合傷口等基本技巧。

A-5 基層醫療實習

- 一、於建教合作醫院設立教學診實施教學，或在開業校友之診所學習。
- 二、注重教學互動協助學生克服初學者不知重點之困難，觀察學生之間診態度與方式，理學檢查之能力及技巧，並就其缺點改正之。

A-6 家庭、社會與醫療

- 一、讓學生有機會體認現代高科技醫療對病人造成的身心影響，並且有機會將一般醫療訓練實際落實

於基層社區診療院所。

B. 醫學系六年級

B-1 臨床診療學（三）

- 一、將婦產科與小兒科課程整合後，稱之為婦幼醫學。同學於此課程中的課程，注重在疾病自然史的了解，回顧過去基礎學科的內容，應用於臨床的合理推理及思考。首先接受重點式核心課程的講解，接著接受密集的實習訓練課程。
- 二、以 20 至 40 本土常見核心病例為教材，先由老師簡要交代自然史，說明問診技巧及重點，再交由學生實際前往病房診視病人，再以小組討論方式進行學習。

B-2 小兒科臨床實習

- 一、學生藉由兒科病房醫療團隊，實際參與且獨立照顧病人，由住院常規工作，治療方法與思考，各項操作，次專科會診及安排病人出院計畫及病情追蹤，以得到完整照顧病人（全人醫療）。
- 二、強調問診（尤其生長發育及族譜），理學檢查，面對問題之邏輯思考，診療決策等基本臨床技巧訓練，以奠定日後各專科訓練之基礎。

B-3 婦產科臨床實習

- 一、輪流至婦科、產科及生殖內分泌科等三個次專科實習，由專責主治醫師指導，住院醫師為輔，進行臨床實習。
- 二、目的在瞭解婦科疾病之症狀與診

斷及治療，懷孕與生產之照護，以及生殖科技之基本適應症與概念。

B-4 自選科臨床實習

- 一、每位同學自由選修兩個科別，進行各為期三週的臨床實習。
- 二、可提供同學選修的科別如下：麻醉科、耳鼻喉科、眼科、法醫學科、皮膚科、家醫科、腫瘤醫學科、檢驗醫學科、骨科、放射線科、泌尿科、復健科、精神科。
- 三、另有高等基礎醫學甲可供同學選修。同學可依個人興趣在本院基礎及臨床學科中尋求指導老師，實際參與基礎醫學之實驗室研究，以作為將來進入 MD-PhD 計畫之前訓練。

B-5 內外科臨床實習（丁）

為內科與外科之加護醫學實習，為期兩週，主要內容有外科加護醫學核心課程。接著分成兩組各實習一週。重點為學習內科及外科加護醫學之照顧。

參、一般醫療訓練實施現況評估

自八十七學年度至今本系共有兩屆二十四位學生參與此項「二階段學程」訓練，實施以來共有數項評估資料：

- (一)內外婦兒科參與學程教學的教師對參與「二階段學程」學生的臨床一般醫療知識與技能、醫療溝通能力、以及醫療團隊精神等指標評估極高比例呈優等成績。
- (二)學生對內外科臨床診療學之教學評估，超過百分之九十的教師獲得的評估無論在臨床知識傳授、啟發式教學設計以及醫病關係的典範等項目均獲得學生極高的評價。

(三)對於基層醫療實習醫院各項評估，顯示參與二階段學程之建教合作醫院在一般醫療訓練實務上均有極高的教學品質及優良的實習環境。

(四)期間「二階段學程」規劃小組曾邀請張步良教授自美返台對住院醫師及學生授課，接受該課程之住院醫師及學生對張步良教授在內科一般醫療的教學給予良好之評價。

肆、一般醫療訓練在台大醫學院的未來展望暨規劃

台大醫學院初步將擴大實施一般醫療訓練，一套整合的 primary care training course 將有效提升並齊一化本院來自不同訓練背景實習見習醫師的臨床照護能力。一般醫療訓練在台大醫學院的角色定位在於協助臨床各科規劃培養 primary care physicians，實際的教學面應回歸臨床各科，由一般醫學科予以協助規劃各臨床科缺乏的一般醫療訓練內容，臨床各科應自行定位該科需要的 primary care physicians 的課程訓練標準，一般醫學科並應協助各科在執行面上達成預定目的。

隨著本院「二階段學程」訓練即將邁入第三年——第二階段畢業後訓練(Post Graduate Year 1) 屆時各科將有 PGY1 住院醫師投入臨床一般醫療照護，可望即將見到一般醫療在醫療院所實施之初步成果。

伍、結語

一般醫療的訓練任務在於建立一套完整且專業的一般醫療照護知識，落實從急診醫學到長期照護都可涵蓋的範圍；長期而言，更期望打破台灣的醫療體系過分專科化、去人性化醫療的缺點。

一般內科訓練—基層醫療的觀點

韓良誠醫師

韓內兒科診所院長

國內臨床教育的改進方向應該是：

將「疾病導向的教育」改為「病人導向的教育」，將「偏重高科技醫療的教育」改為「床邊醫療與高科技醫療並重的教育」並強調「一般醫療」(Primary Care)所需的知識及技術。——謝博生

以上論述應該是本次一般醫療訓練研討會最主要的宗旨。一個醫師養成的三個階段——通識教育、臨床預備教育與臨床醫學教育的過程中，尤其是第三個階段的內科醫師培養過程中，臨床醫學教育的內容應該做適當的調整如：

一、避免過早(R4之前)進入次專科的訓練
二、侵犯性技術所需之儀器以及病理標本的驗讀專家，並非基層醫療單位所擁有。因此應避免或減少高危險性，以及侵犯性技術的訓練(R4之前)以便有更多時間從事門診看病增加 Primary Care 的經驗。

如人工心律調整之裝置，心導管術之訓練，置放肺動脈導管，肋膜切片術，肝切片穿刺，腎切片術，硬腦膜內化學藥物的注射方法，甲狀腺穿刺術，骨髓抽吸術，微血管鏡之操作……。

三、教師除了知識、的傳授之外，多和(學生)，住院醫師給病人做心理、社會、經濟層面的關懷與討論。

四、定期指派住院醫師去得過「醫療奉獻

獎」的醫療工作人員的工作場所做實際的體驗。

五、分科訓練中加入精神科、牙科(口腔醫學)，皮膚科以及眼科的訓練。

六、問診以及理學檢查應由資深教授級教師(最好由退休之名譽教授)傳授。

七、臨床醫學教育除了醫學生的部分之外，教育部也應一併把住院醫師納入。(目前住院醫師部份屬衛生署)

參考資料：

1. 醫學教育——理念與實務 謝博生編著
2. 醫學人文教育 謝博生著
3. 從醫學研究之推動談醫學教育之紮根 黃水坤
4. 台灣地區內科醫師人力現況分析暨未來供給推計之研究
台灣(中華民國)內科醫學會 1999
持人：藍忠孚
協同主持人：李源德 陳明豐

一般內科訓練—醫院的觀點

黃冠棠

台大醫學院教授

一般醫療訓練是醫學養成教育中十分重要的一環，這和專科醫療訓練之深入專科有些不同，一般醫療著重於常見之疾病及一般之檢查治療，因此這是醫師一生當中最須要的知識及經驗。即使對於未來將走入專科領域之醫師，這也是扎根之訓練，可以避免一切都以專科之思考為導向。在整個訓練體系成熟後，我們將有真正可以執行一般醫療的醫師，提供良好的一般醫療，對較偏遠地區之醫療照顧可以提升，同時我們也養成眾多的師資，慢慢由點而線，由線成面，將全國醫療構成一個完美的醫療網，又由於一般醫療之成熟，患者對醫師之信心及熟悉，可以避免到處求醫，國家也可因而減少許多的醫療資源重複使用，落實轉診制度，節省大量經費。

在這樣的理念下，行政院衛生署桃園醫院之地點適中及疾病分佈之型態是最好的訓練醫院之一，既不會有最後一線醫院疾病高度選擇之偏差，也不會都偏重於輕症，因此台大醫學院以行政院衛生署桃園醫院為中心，制定了一般內科之住院醫師訓練，以二個月為一個單元，所有之受訓醫師都須在此接受共四個月之一般內科訓練。目前之訓練方式是由各有專長且熟悉一般內科的七位內

科主治醫師共同指導三位住院醫師，上午晨會討論新病例及值班突發狀況，中午依須要講授一個主題。住院醫師每人照顧六至八位住院病患，以最佳品質為目標。主治醫師則輪流在病房指導，除了個人專長以外，亦須就一般內科的立場表示意見，初步已有滿意的成果。住院醫師的表現進步快而且態度良好，由於病情多樣化，更須自行思考及互相討論。以往花費許多時間找照會醫師、找專科醫師做決定的情形改善很多。

預期這四個月可以使住院醫師由生澀之醫師進步為較成熟的基層醫療醫師。當然內科領域十分廣泛，並非經過四個月就可以了解全貌，但一般內科訓練之目標著重在常見之一般內科疾病，且同時訓練良好的醫病關係，相信這基本之訓練將是最重要的養成教育之一。往後再以行政院衛生署桃園醫院為中心深入較偏遠社區，派醫師至社區服務，如有須要馬上轉往行政院衛生署桃園醫院，構成一地區性完善醫療體系。

一般外科訓練

張金堅、陳維昭、林明燦、柯文哲、郭文宏、何明志、蔡孟昆、賴逸儒
台大醫學院外科

一般外科(General Surgery)向來為外科醫學教育與訓練中的最基本與重要的部分(1)。傳統上，一般外科是台大醫學院醫學生畢業前外科學教育的主幹，以及醫學生畢業後台大外科初級住院醫師(Junior Resident)(R1, R2)接受一般外科醫療照料訓練(Primary Care)(表一)。

最近，台大醫學院進行的醫學教育改革中的重要項目之一為一般醫療課程(2,3)，包括醫學生畢業前的教學與畢業後住院醫師的訓練，稱為『二階段學程』(表二)，這個學程強調注重『一般醫學』(General Medicine)的觀念，主要包括一般內科，一般外科，一般兒科以及一般婦產科。『一般外科』是一般醫學的主幹之一，特別注重外科的 Primary Care 的訓練以及外科基本知識與技術的傳授。本科由一開始便積極參與規劃這學程(表三)(4)，經過這兩年的施行之後，與傳統的一般外科訓練(表四)互相影響與激盪，更為一般外科的醫學教育與訓練，注入新的一股生命力。

傳統的外科醫學領域就有『一般外科』的觀念(表五)。台大外科從傳統上即重視『一般外科』的訓練(表四)。目前一般外科是台大

外科部中最重要的分科之一。一般外科以後漸漸發展成各個次專科，但仍然是所有外科專科的根本。所謂『一般』(General)實在蘊含著多層面的意義，包括基本，普通，整合，共通，總則等等的概念，看似簡單，其實最不“普通”(在大陸，一般外科稱為“普通外科”)。外科學的基本知識，包含輸液電解質，外科營養代謝，創傷反應，感染，傷口癒合等等領域，是所有外科領域的共通基礎，正是屬於一般外科的範疇(表五)。這些基本的外科病人照料(Primary care)知識與技能橫跨各個次專科領域，是每一位次專科醫師必需具備。然而，最近在台灣的醫療體系之下確是常常被醫師忽略的一部分。

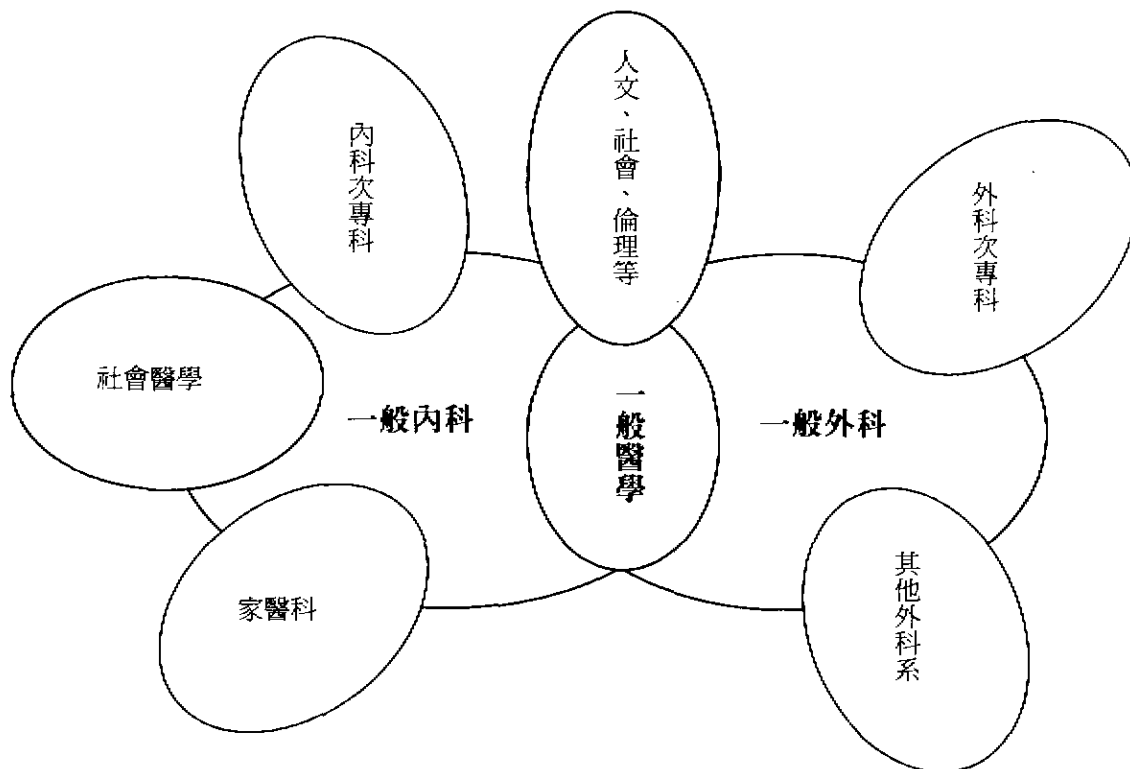
表一：傳統型一般外科醫學教育

1. 畢業前	一般外科教學
五年級	外科核心課程
	外科學實習
六年級	外科學實習選修
七年級	外科學臨床實習
2. 畢業後	一般外科訓練
	外科 R1&R2 訓練

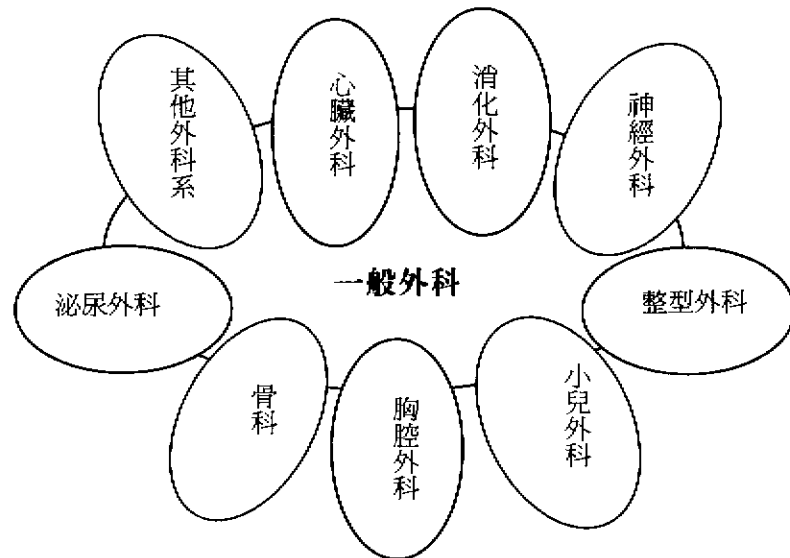
表二：台大醫學院二階段學程教學

A. 醫學系五年級	B. 醫學系六年級	C. 畢業後第一年訓練(PGY1 Post-Graduate Year-1)
A-1 臨床診療學(一) A-2 臨床診療學(二) A-3 內科臨床實習 A-4 外科臨床實習 A-5 基層醫療實習 A-6 家庭、社會與醫療	B-1 臨床診療學(三) B-2 小兒科臨床實習 B-3 婦產科臨床實習 B-4 自選科實習 B-5 內外科臨床實習(丁)	C-1 內科組—內科住院醫師訓練 C-1 外科組—外科住院醫師訓練 C-1 兒科組—小兒科住院醫師訓練

表三：一般醫學概念



表四：一般外科醫學概念



表五：Sabiston 外科”聖經型”教科書所列舉有關外科基礎知識章節

The development of surgery: Histroical Aspects of Modern Surgical Science.
Molecular biology in surgical.
Clinical outcomes in surgery.
Homeostasis: Bodily Changes in Trauma and Surgery.
Shock: Causes and Management of Circulatory Collapse.
Fluid and electrolyte management of the surgical patient.
Principle of preoperative preparation of the surgical patient.
Blood transfusions and disorders of surgical bleeding.
Metabolism in surgical patients
Surgical aspects of diabetes mellitus.
Anesthesia and postoperative analgesia.
Wound healing: Biologic and Clinical Features.
Burns: Including Cold, Chemical, and Electric Injuries.
Principles of operative surgery: Antisepsis, Technique, Sutures, and Drains.
Surgical infections.
Trauma: Management of the Acutely Injured Patient.
Surgical complications.
Acute renal failure in surgical patients: Prevention and Treatment.
Immunobiology and immunotherapy of neoplastic disease

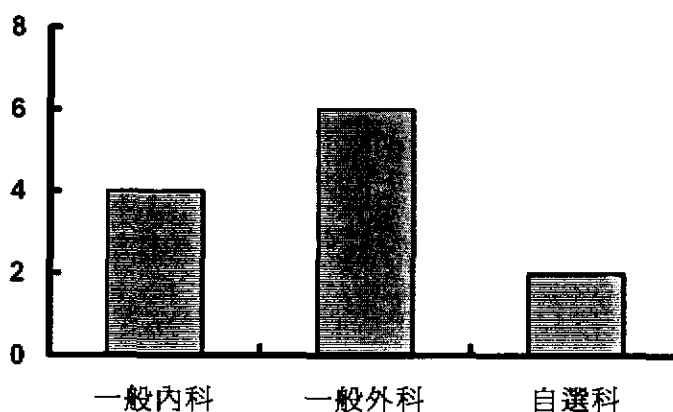
在次專科爲主的現代外科醫療體系中，強調的是 *Specialis*，甚至 *Subspecialist* 的觀念。瑣碎繁雜片斷性的知識，確也是次外科專科醫學中的大部分。其實，外科各次專科，有它的共通性與特異性(*Specific*)。甚至，外科與內科以及其他科的知識也有其共通性。現代外科醫學，一方面要重視專科的醫學教育；另一方面，也需要強調『一般外科』的重要性，二者互補不可偏廢。

過分強調次專科外科醫學教育的結果，有些胃腸外科的醫師只知道如何切腸子，胸腔外科的醫師只知道切肺，骨科只知道肌肉與骨骼等等不正常現象。所謂的『刀匠』，確實存在於目前台灣的外科醫界。基本的糖尿病控制，電解質與輸液治療，心肺衰竭，腎衰竭等等的一般性醫學知識不受次專科的外科醫師重視，甚至完全依賴次專科醫師，確實是外科常見的現象。一個外科醫師如果

不能掌握病人整體狀態，只會開刀的話，很可能病沒處理好反而導致很多併發症，甚至死亡。理想的外科醫師應具備掌握病人全體(全人醫療)的能力。然而這種能力，會隨著過度專科化的醫療喪失。另一方面，如果外科醫師成爲一個只會開刀的『刀匠』，將大大減低與局限了外科醫師的工作成就感。

現行醫學教育改革中的一般醫療課程，除了有助於加強及整合這些『一般外科學』的教育與訓練(表四)。藉由與一般醫學教育更緊密的結合與整合，可以提升外科教育的廣度與層面(表三)。醫學生的教學與住院醫師訓練範疇，從嚴謹的大學醫學院學術殿堂，到基層的社區建教合作醫院醫療；從高科技醫療新知到人文醫學教育等等。本科將這種多元化的精神於一般醫療科外科系住院醫師訓練，內容變化性較大，包含一般外科、一般內科，甚至加入自選科(表六)。

表六、二階段學程畢業後外科系訓練



台大外科目前對 Primary care 的訓練方式逐步加以改革。首先嘗試將 Primary care 組成一個醫療團隊(Team)。讓醫學生實際擔任醫療團隊的一員。這個醫療團隊包括導師(主治醫師)、總住院醫師、住院醫師以及醫學生(當作 Intern)。儘量減少見習者(clerk)的階段，並且直接照顧(Primary Care)病人，藉由醫學生直接參與醫療過程以及減少醫療勞工(Labor)的工作量，特別對外科這種“動手”的科目，有很多的外科技術與技能，更可達成增進學習效果，並且提升醫學生對外科的學習興趣。

爲了提升外科 Primary care 教學，針對醫學生的基本外科學的教學內容也作了大幅改良，本科老師們因此精心設計了所謂『核心一百』課程。針對一般代表性外科疾病

(Prototype disease)作一完整的介紹(表七)，並加強外科手術與創傷生理病態，營養代謝變化，外科感染與重症等基本認識，再配合上床邊教學，內容相當基本但充實，避免過於瑣碎與片斷性的專科知識。另外，由老師們自己編寫一套教學手冊，既符合『醫學本土化』的理想，也方便學生研讀，台大外科部依此理念，陸續編寫『台大外科住院醫師醫療手冊』，『台大外科重症加護醫療手冊』，『台大外科創傷手冊』，目前更製作『台大外科國考題庫』光碟片(5)，『台大外科一般手術圖譜』等等(表八)，供同學複習及自我測驗之用。這些種種教材的改良，對於醫學生及住院醫師學習外科 Primary care training 有所助益。

表七：台大外科『核心 100 課程』內容

I 重症醫學	心肺復甦術 休克 機械性循環輔助器 加護病房病人的鎮定	手術後大量出血 急性腎衰竭 腦死與器官捐贈 呼叫器使用
II 基本原理	外科病人的新陳代謝 縫線與引流管(a) 縫線與引流管(b) 全靜脈營養 輸液和電解質	動物實驗 大量輸血 抗生素之使用原則 AIDS 與外科 無菌術
III 小兒外科		
IV 心臟外科		
V 胸腔外科		
VI 神經外科		
VII 一般外科		
VIII 整型外科		

表八：台大外科學教材改進

1. 核心一百
2. 台大外科住院醫師醫療手冊
3. 台大外科重症加護醫療手冊
4. 台大外科創傷醫療手冊
5. 台大外科國考題庫手冊
6. 台大外科一般手術圖譜

雙向互動式的小班教學是本科針對 **Primary care training** 所作的教學改革。以往傳統的大班式講堂授課，只有單向的傳遞知識與思想，無法獲得學生們的回饋，影響學習效果。再加上鼓勵同學們具有主動學習的態度，積極並樂於作雙向式溝通，與傳統式教學相教，確實可大幅增加學習的效果。對於外科老師而言，來自學生的回饋與疑問的挑戰，有『教學相長』的作用，良好雙向式互動習慣的養成，是將來成為好的外科醫師的基本訓練。

類似導師制的教學，是本科教學改良的另一項特色。這些老師們與醫學生們相處時間較長，甚至包括課餘時間的聚會與座談，可藉此拉近師生間的距離。老師們有機會瞭解他們各人的特質，「因材施教」，確實可提高學習效果。學生們可選擇自己的「偶像」(Role Model)，鞭策自己努力與進步。這種學生心目中的外科醫師的「形象」(Image)，可藉由一般醫學教育的潛移默化中完成。

一般外科教育特別注重人文醫學教育。與其他科相比較，外科因為手術作很大的介入性治療(Intervention)，會對病人產生很大的壓力(Surgical Insult)，有時也會造成意想不到的併發症。外科醫師更需要培養溝通能力，

責任感，尊重生命與關懷病人的情操。在現今的商業化的醫療體系中，更須加強人文醫學教育。『健康至上，生命無價』確實是醫學的核心價值。本科常向外科住院醫師及醫學生們推薦有關醫師們的溫馨小品著作，兼以激發他們的人文關懷的興趣(表九)。

表九：激勵人文關懷的相關小品

生命的臉
死亡的臉
神經外科的黑色喜劇
電影中的醫學世界

一般外科醫學教育將不能空有理想，“紙上談兵”。現行的健保醫療體系衝擊著醫療行為，特別是外科。病人的權利意識高漲，除了加強人文關懷的情操以外，醫療法規的認識以及病歷記載的要求也是一般外科須要加強的課題。現行的健保給付下，如何避免醫療資源浪費，所謂的醫療經濟學等等，也是一般外科的重要課題。更深遠而論，如何改善整體醫療體系，是所有外科醫師所應共同關心的。這類的問題，是每一種外科次專科所面臨的，可歸於一般外科的範疇。

台大的一般外科訓練包括外科實驗。現代的外科學教育應包括外科研究，好奇與研究心是激勵外科醫師進步的動力。另一方面，動物實驗更可以讓手術技術更加成熟。新手的外科醫師接受動物實驗的訓練對日後在病人身上手術極有幫助。台大一般外科每年定期舉行的手術技術研習營，提供醫學生選修 R1, R2 作動物手術的訓練機會(表十)，藉此啟發與激勵醫學生及年輕醫師對外科手術的興趣。

表十：台大外科手術技術研習營

一、主旨：加強外科教學及臨床手術縫合技術訓練

二、目的：

1. 激發與培養醫學生對外科的興趣
2. 提升外科住院醫師及實習醫師臨床手術縫合之技術
3. 增加醫院附加價值，加強外科人才之培訓
4. 提升住院醫師及實習醫師對手術縫合材質之認識

三、培訓計劃及時間表：

場次	主題	預定日期
1	Basic suturing workshop	3月4日'2000
2	Advance surgical suturing	9月2日'2000
3	Basic suturing workshop	12月2日'2000
4	Advance surgical suturing	6月3日'2000

外科醫師時常站在第一線為病人的生死在搏鬥。生命的意義與價值以及死亡的尊嚴更需外科醫師深入思考(3,6-7)。如果生命確實是無價的，平等的，那麼確實大大提升了醫師，特別是外科醫師的成就感，但是相對的，卻也增加了外科醫師的責任負擔。另外，如果所有生命為平等與無價的話，這中間存在了某種矛盾與不可能兼顧。更進一步，死亡的意義與尊嚴為何？最近再加上生物科技急速發展，與人際關係的複雜化，“腦死”，“安樂死”，外科手術教學，創新手術，病人告知，病人的選擇等等外科常見的倫理問題(8-12)。這些並不是單純外科學領域的問題，尚還牽涉到社會，人文，法律，倫理等等的範圍。這種與其他層面整合的外科等教育應歸屬於一般外科，這是所有外科次專科所會共同面對的。

面臨 21 世紀外科的進步一日千里，以及台灣本土醫療環境的遽變。台大外科一方面致力於培養一流的專科醫師，解決艱難的疾病。另一方面，更向下紮根，注重外科基本原理；加強一般外科的教育與訓練，並且藉由一般醫療課程，強化外科醫師的一般內科知識的教育，以及人文與社會關懷精神。藉由同時提升專科與一般醫學的教育，以期培養才德兼具的外科醫師，提升台灣外科的醫療品質。

REFERENCE:

1. 謝博生：醫學教育理念與實務. 醫學人文叢書 4，1997.
2. 謝博生：醫學概論. 醫學人文叢書.
3. 國立台灣大學醫學院八十九學年度醫學系設立『一般醫學科』計畫書.
4. 張金堅，林明燦，郭文宏，蔡瑞章，洪慶

- 章：我國國家醫師執照考試外科學之改進。醫學教育研討會，p42-52，1999。
5. Mary-Jo DelVecchio Good：醫學倫理教育：世界趨勢與哈佛經驗。醫學教育。第二卷。第二期。1998。
6. Darry Macer：實施醫學倫理教育之過程。醫學教育。第二卷。第二期。1998。
7. Gert H. Brieger, M.D., PhD. The development of surgery: Historical aspects important in the origin and development of modern surgical science. The biological basis of modern surgery practice, 15th edition, Textbook of Surgery, Sabiston. P1-34.
8. Thomas T. and Claude H. Organ：Ethics in Surgery: Historical Perspective. Archives of Surgery, vol.135, P10-13, 2000.
9. Francis D. Moore：Ethical Problems Special to Surgery: Surgical Teaching, Surgical Innovation, and the Surgeon in Managed Care. Archives of Surgery, vol.135, P14-16, 2000.
10. Panna L. Nandi, FRCS(Edin), FRCS：Ethics Aspects of Clinical Practice. Archives of Surgery, vol.135, P22-25, 2000.
11. Melissa M. Bottrell, Hillel A., Ruth L. Fischbach, et al.：Hospital Informed Consent for Procedure Forms: Facilitating Quality Patient-Physician Interaction. Archives of Surgery, vol.135, P26-33, 2000.
12. Lynn M. Peterson.：Human Values in the Care of the Surgical Patient. Archives of Surgery, vol.135, P46-50, 2000.

一般兒科訓練

吳美環、胡務亮
台大醫學院小兒科

壹、簡介：

- 一、訓練之範疇：廣泛的瞭解兒童健康之照顧，充份學習各種兒童疾病狀況的處理。必需包括住院病人的照顧，門診，社區醫療，及兒童保健等。
- 二、訓練時間：三年，第一年的訓練必涵蓋基礎的醫療知識，使其具有進一步接受其他訓練的能力。第二年以後的訓練需包含對較年輕住院醫師的指導。
- 三、訓練目標：訓練出具有完整能力的小兒科醫師，使其可以處理各種的兒科患者，能執行高水準的社區醫療，對於各次專科有足夠的瞭解，能參與複雜病情患者之照顧。第一年訓練完畢後需具有轉往其他內科系科目訓練之能力。

貳、組織架構：

- 一、每一住院醫師需有其歸屬之機構。
- 二、參與機構：台大醫院將聯合其他之醫療機構，共同參與住院醫師訓練計劃。所有參與機構均需有書面聲明，同意訓練的責任、方式及內容，包括參與訓練教師之資格及參與程度。
- 三、住院醫師之選拔：將另成立選拔委員會進行之。

參、參與訓練老師之資格與責任：

- 一、台大小兒科主任為訓練計劃的負責人。需投入足夠的時間，維持訓練的連貫性。其責任包括計劃之擬定，參與訓練機構之選擇，教師之聘任，住院醫師之遴選及考核等。

二、教師

1. 台大醫院及其他參與訓練之機構需有足夠數量的兒科教師(含一般兒科)教師參與住院醫師的訓練。社區醫學及門診醫學均需包含在內。一般兒科教師需投入足夠的時間與住院醫師產生互動，培養其完整，獨力照顧患者的能力。
2. 台大醫院小兒部需有足夠數量涵蓋各次專科醫師參與住院醫師的訓練。
3. 行為、發展、心理、青少年醫學均需包含在內，也需要外科、放射科等的參與。這些可藉著科部合作計劃來達成。

肆、訓練內容

- 一、一般兒科：為了保證對一般兒科有足夠的訓練，住院醫師訓練應有一半以上的時間直接參與或負責患者的照顧，包括門診、急診、社區醫療、住院醫療、新生兒之處置，以及上述醫療患者之連續追蹤等。

1. 住院醫療：住院醫師應學習成為住院醫療中之主要負責者，熟悉各種技巧，包括如何面對患者，詢問病史，檢查及治療之設計與執行等。
2. 急診及急症患者之醫療。至少四個月。
3. 門診醫療，包含住院患者等之病兒追蹤 (continuity clinic)。
4. 新生兒的照顧。
5. 社區醫療。

(請見附錄一)

二、次專科訓練：次專科的教育是小兒科住院醫師訓練中極重要的一部份，雖然不可參與每一次專科的工作，但對於其內容必需有所瞭解，而且應是整體性的，也就是由門診、住院到追蹤。住院醫師必需知道何時要照會次專科，並和次專科醫師一同工作照顧複雜性之患者，尤其是在慢性期。(請見附錄二)

1. 加護醫學。
2. 青少年醫學。
3. 其他次專科。
過敏免疫、腸胃、感染、遺傳、心臟、血液/腫瘤、內分泌新陳代謝、腎臟、神經、肺臟等。

三、其它領域，如倫理學、醫療管理、保健、資訊。

四、各項手術及技巧。(請見附錄三)

1. 必需純熟的技巧。
2. 必需經歷並有所瞭解之技巧。

五、學術活動。(請見附錄四)

附 錄 一：

訓練地點、項目及時間之分配

小兒科住院醫師的訓練在病房、嬰兒室、早產兒室、新生兒及小兒加護病房、兒童心理衛生中心、門診、急診部及與本部有建教關係之教學醫院，藉實際工作的機會，寓學習於服務；藉指導見習醫師與實習醫師的機會，培養教學的能力；並藉各種討論會，包括臨床病例討論會、文獻討論會、各次專科討論會以及各科間討論會來灌輸醫學知識與臨床經驗，並鼓勵參與臨床研究及撰寫臨床報告、論文，以培養日後從事研究的能力。訓練時間分配如下：

訓練時間分配

第一年住院醫師(For 兩階段學程 PGY1)：

一般兒科：8 個月

社區醫學：1 個月

觀音鄉社區醫療中心：1 個月

地區醫院：1 個月

急診醫學：1 個月

一般內科：2 個月

一般兒科

病房：4 個月

7B 兒科綜合病房

7C 兒科綜合病房

7D 以小兒血液科及心臟科患者為主

嬰兒室(及健兒門診)：1 個月

加護病房：2 個月

7C 兒科中度加護病房

4C2 兒科綜合加護病房

建教醫院：1 個月

第二年住院醫師：

病房(25%)，門診及急診部(35%)，觀察室及加護病房(15%)，心理衛生中心(10%)，建教醫院(15%)。

第三年住院醫師：

加護病房(15%)，次專科訓練(30%)，嬰兒室、門診及病房指導(40%)，建教醫院(15%)。

訓練地點及項目

病房：在第三年以上住院醫師及主治醫師指導下，負責病人之斷及治療，每日晨七點半前抵病房診視患者，並與值班醫師及護士交待病情變化，即時研商與處理。日間進行各病患之檢查、分析與討論，由病房主治醫師(Section VS)迴診指導。另有次專科主治醫師每日一次定期及其他迴診及不定期照會，使各級醫師得充分學習新知，也使病人得到最完善而適當之處置。

急診部：在主治醫師督導下，從事急診病患的醫療工作，包括病歷記載、緊急檢查、藥物處方等。並安排進一步之檢查、治療、追蹤等事宜，如有疑難，得隨時照會各次專科醫師協助處理。

嬰兒室及早產兒室：嬰兒室主要為本院產房出生之正常嬰兒及早產兒，以及部分院外出生早產兒而設。住院醫師於嬰兒室期間，得學習新生兒之生理學檢查、先天性異常及諸早產兒之醫護新知及有關處置。對生理性與異常黃疸之判別，更需要熟習。每日有次專科醫師迴診，做示範並指導如何鑑別正常嬰兒之生理特徵及異常嬰兒之病理症狀。

新生兒加護病房：主要為本院出生之新生兒，需特別加護者，包括早產兒之呼吸治療，以及其他生命徵象復甦或維持。學習各種新生兒及早產兒操作手術項目。

小兒加護病房：日間由主治醫師迴診，夜間由總值班醫師迴診，指導病情之診斷與處理。住院醫師在此期間，除上述病患臨床訓練以外，還需完成呼吸治療、心肺監視、靜脈切開、腹膜透析及中央靜脈壓測定等其他操作手術項目的訓練。

門診部：

門診治療：協助各主治醫師對病患之處置，如輸液治療、輸血、腰椎穿刺等，並負責病患之出入院、特別門診之安排。

一般門診：每月一次定期在門診追蹤病人，以便了解各醫師在病房期間自己照顧而出院病人之進展及各種疾病之自然史。

健兒門診：在主治醫師指導下，觀察及評估健康嬰兒的生長與發育、餵食狀況。安排預防接種及熟知可能之併發症。接受家長的衛教諮詢，並提供建議。

特別門診：資深住院醫師依其興趣及科內需要，在細專科教授的指導下，學習各特殊疾病之專門處置及長期追蹤與治療。

兒童心理衛生中心：小兒科醫師不只治療小兒身體上的疾病，對他們身心發展的過程與心理衛生也應有充分的理解，尤其是病童住院時的心理反應及人格調適，以及家屬與病童間的互動關係，對於疾病的痊癒也有決定性之影響。兒童心理衛生中心教導醫師如何運用會談技巧及熟習與家屬談話內容之寓意和反應，了解疾病在身心上造成之影響及在家庭、經濟、社會等各層面的衝擊，而可事先預防，並疏導心理障礙，以接受適當之治療。在社會層次上，小兒科醫師在兒童心理衛生上可以協助預防小孩害怕上學、離家出走、青少年犯罪及自殺等不幸事故。

附 錄 二：

各次專科訓練要點

新生兒科：新生兒疾病之臨床表現與較大嬰兒或孩童疾病之表現迥異，對於其疾病之辨認與診斷需要高度警覺性才可。特別著重呼吸窘迫症候群、氣胸、感染、顱內出血、新生兒窒息、新生兒黃疸以及代謝方面異常之辨認與處置，對於先天性異常及先天性心臟病之診斷亦應加以注意。而各種新生兒疾病與高危險性妊娠之間的關係更不可不知。在早產兒的處置方面則以餵食公式之妥善訂定及施行，以及熟悉使用氧氣之適應症與危險性最為重要。

感染症：在台灣感染症仍是重要的小兒科疾患之一，佔每年小兒科住院病例相當大的比例，對於各種感染症的鑑別診斷及治療是一般小兒科訓練中很重要的一部分。對於敗血症與腦膜炎應能作早期臨床及微生物學

的診斷並給予適當抗微生物治療，對發疹性疾病則應作詳細的臨床觀察以吸取實際經驗。對於抗生素的使用應注意適當劑量、途徑及種類是否正確，有數種抗生素同時使用時，應考慮其是否會產生加成或相抑效果。而抗生素毒性亦應特別注意。對於藥物使用前適當檢體的採取、檢驗方法的選擇及判斷，應有正確的認識，才能及早證實診斷。基本臨床血清檢驗及細菌與病毒培養結果之判讀，應有一定的了解與能力。需要特殊血清學及其他有關檢驗室檢查以助診斷者，則應請教上級醫師或參考有關書籍，以免錯過時機延誤診斷。

心臟病：於心電圖及胸部 X 光片的判讀時，應考慮病兒的年齡，才不會發生錯誤，於訓練過程中亦強調此點。對心導管手術操作過程，血力學數據及心臟血管攝影檢查結果之判讀，亦應有基本認識。對先天性心臟病之辨認、鑑別診斷、作心導管檢查治療及先天性心臟病之自然史開心手術之合適年齡應有初步認識，對於鬱血性心臟衰竭及缺氧發作之處置尤應熟習。心臟手術後之照顧，併發症之判斷及處置：應熟習風濕性心臟病之初級預防（即利用喉頭拭子培養診斷 A 型溶血性鏈球菌咽炎，並給予適當治療。）及次級預防（即防止已有風濕性心臟病例再度發生鏈球菌感染，俾能減少甚或杜絕風濕性心臟病之發生）。

血液及腫瘤學：血液相及骨髓抹片之判讀：利用血液相作為各種疾病診斷或預後之判斷的參考。各種血液病之診斷與治療方針，其中以缺鐵性貧血、海洋性貧血、血友病、白血病之診斷及治療最為重要，對於腫

瘤病例則應訓練如何迅速完全診斷，並迅速完成常規檢查，以規範病期作為選擇治療之依據及預後之判斷。應熟習並執行化學療法，且培養對併發症之警覺性。對輸血之再認識，養成血液成分治療之觀念。

免疫學及過敏性疾病：各種免疫學檢查之作法、判讀法及其臨床意義之認識。對於先天性及繼發性免疫異常之認識。對氣喘病之診斷及處置，包括藥物治療及減敏療法，應要熟習。其他各種過敏性疾病，包括異位性皮膚炎、過敏性鼻炎、蕁麻疹各種食物及藥物過敏之診斷及處置。小兒結締組織疾病之診斷及處置。免疫療法之基本原理及作法。

內分泌系統疾病及代謝異常：各種內分泌檢查法及兒童各成長期判讀法。

較常見的內分泌疾病例如先天性甲狀腺機能低下症（呆小症），先天性腎上腺增殖症等之早期診斷及長期追查。生長遲滯或侏儒症之原因的尋找，如為內分泌系統異常所造成，則可予以適當治療。先天性代謝異常之致病機轉、臨床診斷之熟習。兒童期糖尿病之診斷、長期治療及併發症的預防。

神經學：加強神經解剖、生理病理和臨床神經學。熟習腰椎穿刺的適應症和方法。神經 X 光學、腦波、腦部掃描攝影之適應症及檢查結果的判斷。對於兒童神經系統之正常發育應有正確認識，以期能辨認不正常的發育遲滯。新生兒、嬰兒、兒童之神經學檢查。對於熱性痙攣及癲癇症之診斷、處置及預後之熟習。對腫瘤、水腦症等應能迅速完成診斷。抗癲癇症藥物治療、血液濃度之監視(TDM)。ABEVP。肌切片：操作及組織學

及生化檢查。週一、週五特別門診。病房迴診（週一上午科主任，其它日子主治醫師）。

腎臟系：著重於各種腎臟病的診斷，及病理切片判讀包括腎病症候群、紅斑性狼瘡、腎炎等，並熟知其長期處置及預後。電解質及水平衡之研究，並熟習輸液療法。酸鹼平衡及腎小管疾病之了解、診斷與治療。急慢性腎衰竭之診斷及處理。動靜脈血液濾過、血液透析、及腹膜透析之適應症及其施行。泌尿道感染及先天異常之處置。

醫學遺傳學：臨床遺傳學之診斷及治療工作。生化遺傳學之診斷及治療工作。臨床細胞遺傳學之診斷工作。分子遺傳學之探討。

消化學：常見胃腸疾病的診斷及處置，例如腹瀉、便秘的鑑別診斷與處理。兒科腹部急症的基本概念。了解那些急性腹痛應立即照會充分建立。台灣常見的肝炎其流行病學、疫苗使用，及如何監視病人之病程與目前常用的藥物治療兒童營養的基本概念，認識各種市面上的一般及治療性嬰兒奶粉配方、母乳的優越性。學習如何處理營養不良及營養評估。配合及學習各種胃腸科技術後之各項準備工作、肝切片病患術前術後之準備等等。

附錄三：

學術及臨床討論會：

文獻抄讀會：每週一次由住院醫師輪流報告。每次報告四至五篇文獻，內容由主治醫師指導，自行收集文獻或由主治醫師指定

書籍，詳讀後撰寫其摘要後口頭報告，藉以訓練如何綜合所學所知，相互討論，以充實學識。

X 光片討論會：每週一之由 X 光科指派主治醫師蒞會與本科主治醫師及住院醫師共同討論；由住院醫師提出疑問，就 X 光片進行講解、分析及討論。

病例討論會：就單一病患進行綜合討論。由負責住院醫師報告並分析後，由主治醫師加以評語，再由全體主治醫師做綜合討論並做結論。

專題討論會：就某一專題，由住院醫師整理報告，由主治醫師討論及教學。

臨床病例聯合討論會：每二週有一次，由台北市九所公私立醫院小兒科醫師參加，分別討論報告。就各院之特殊病例提出報告及討論。

新生兒學聯合討論會：每週一次由台大、市立婦幼及永和耕莘醫院小兒科醫師參加，包括專題演講及各院之特殊病例討論。

科際聯合討論會：每月一次由本科和婦產科、小兒外科等分別舉行，就各種病患進行討論。

專題演講會：邀請國內外專家或本院資深醫師及學者講授，使本科醫師得以對某一專題獲得更深了解，每週一次，必要時得增加。

心臟病例聯合討論會：每週一次，就本週接受心導管檢查病例及其他需開刀之病例與外科醫師討論。

免疫學臨床與基礎聯合討論會：每週一次由本部主持，邀請臨床其他科系及醫學院之基礎研究人員，報告其最近之研究計劃的

內容、初步結果、與國內外之最新研究進展，再由全體免疫學研究人員綜合討論，建議進一步之研究方向與方法。

臨床醫學研究：用空餘及下班後時間撰寫病例報告以及從事臨床醫學研究，由主治醫師指導。其具體步驟與內容應由主治醫師級以上人員審核與督導。

工作日曆：

每日晨七時半抵院，診視所負責病患，並與值班人員研討病患病情之變化，並即時處置。八時參加晨會，報告及討論前一日出入院病患之病情摘要。九時起，由第三年以上住院醫師率住院醫師、實習醫師及學生進行小組迴診；十時起，由病房主治醫師及次專科主治醫師交互迴診。午間一時起，為臨床會，按序：週一為文獻討論會，週二為專題討論會或專題演講會，週三為 X 光片討論會，週四為病例討論會、科際聯合討論會，週五為實習醫師抄讀會，週三早上十一時起為血液病例聯合討論會，週四早上為心臟病例聯合討論會。週六下午二時至四時為免疫學臨床與基礎聯合討論會。下午二時起至四時半，為醫務工作執行、檢討與實務指導。四時半起，由總值班醫師至各病房交接重大病患之病情交待，各病房由值班醫師負責，其餘人員得參加臨床病例聯合討論會及臨床醫學研究。晚間七時，總值班醫師率領全體值班醫師進行迴診。

共同參與住院醫師訓練之建教合作醫院：

台大公館院區

附 錄 四：

小兒科常用操作及小手術

診斷性操作：

靜脈穿刺(venopuncture)
股部穿刺(femoral puncture)
動脈穿刺（包括撓動脈、臂動脈及表層顳動脈）[arterial puncture (radial, brachial, or superficial temporal)]
頸靜脈穿刺(jugular vein puncture)
鎖骨下靜脈穿刺(subclavian vein puncture)
胸膜穿刺(chest tapping)
腹部穿刺(abdominal tapping)
腦室穿刺(ventricular tapping)
硬腦膜穿刺(subdural tapping)
腰椎穿刺(lumbar puncture)
腦池穿刺(cisternal puncture)
恥骨上膀胱穿刺(suprapubic bladder puncture)
關節穿刺(arthrocentesis)
尿道插管(urinary catheterization)
顳骨透照法(transillumination of skull)
耳鏡檢(otoscopic examination)
眼底鏡檢(ophthalmoscopic examination)
血清膽紅素值測定（微量法與標準法）
靜脈壓測量（週邊靜脈壓或中央靜脈壓）
心包穿刺(pericardiocentesis)
骨髓吸取法(bone marrow aspiration)
超音波檢查法(ultrasonography)
心電圖檢查(electrocardiography)

治療性操作：

靜脈注射(iv injection)
周邊靜脈點滴輸液(peripheral vein infusion)
中央靜脈點滴輸液(central vein infusion)
頭皮靜脈點滴輸液(scalp vein infusion)
靜脈導管術(iv catheterization)
動脈導管術(arterial catheterization)
經皮周邊中央靜脈導管術(percutaneous peripherally central vein catheterization)
胃插管(gastric intubation)
胸管放置及引流(chest tube insertion and drainage)
經口或經流鼻氣管內管之放置(oral-endotracheal and nasotracheal intubation)
呼吸治療（包括氧氣頭罩、氧氣帳、呼吸器）[respiratory therapy (oxygen hood, O2 tent respirator)]
臍導管放置（臍動脈與臍靜脈）[umbilical catheterization (arterial and venous)]
光照療法(phototherapy)
換血治療(exchange blood transfusion)
腹膜透析(peritoneal dialysis)
連續性動靜脈血液滲析(continuous arterio-venous hemofiltration)

一般醫療訓練

謝博生

台大醫學院院長

壹、前 言

在過去，對於醫學教育目標與內容的關心一直是侷限於醫學界，由醫學教育家來決定教育的目標，由醫學院的教育主管及教師來決定教學的內容，對於醫學領域內知識的累積更新及技術的創新發展，通常以擴張課程內容來回應，醫學院及教學醫院均強調生物醫學科學及在資深醫師指導下的臨床經驗訓練，社區民眾的健康及社會整體的需求並不是決定醫師如何培育的重要因素。

近年來，醫學教育界已經體認到：醫師的培育與醫療體系之間應有密切的聯繫，而醫學教育與社區民眾的醫療照護需求發生斷層的現象也越來越受到政府、媒體、及社會團體的關切，來自醫學界以外的關心開始對醫學教育產生重要的影響。

現代醫療體系強調以社區為基礎、以病人為導向、健康促進與疾病治療並重的醫療服務，醫學教育應能配合此一趨勢，在課程及教學做適當的變革，接受訓練的醫師也應將社區視為學習環境的一部份。以社區為基礎的醫學教育在課程方面特別重視基礎醫學、社會醫學與臨床醫學的整合，早期與病人接觸，疾病預防與治療並重，在臨床訓練方面則強調加強「一般醫療訓練」，讓學生經由實際的病患照顧，學習到有效而可靠的評估、判斷、處置、

解決病人問題的能力，養成社區醫療所需的臨床技能，並培養關注社區健康的觀念。本文就台大醫學院一般醫療訓練的目標、內容、教學及其他相關事項做一簡介。

貳、訓練目標與內容

一般醫療訓練具有「被認可的職位」、「負責任的醫療」、「由上級醫師監督指導」等三個特色，其訓練期間為期一年，讓學習者在上級醫師監督之下，以第一年住院醫師的職位，負責病患診療的工作，從中獲取經驗，訓練的目標如下：

- 一、發展信心：經由上級醫師的監督及指導，讓學習者獲取核心知識（常見臨床問題、急診、復健的相關知識），學習診療技術（診斷技術、治療技能、醫療決策），培養醫療態度與學習態度，藉以發展學習者獨立執行醫療任務的信心。
- 二、接受責任：經由臨床經驗的提供，對病人的照顧、檢驗及治療做決策，並對這些決策負起醫療上的責任。
- 三、改善溝通技巧：這是一般醫療訓練中非常重要的環節，在畢業後第一年之間如不能充份發展，以後的臨床能力就會受到影響。
 1. 獲得執業技術：醫療面談（病史詢問）、理學檢查、適當利用檢驗的技

術，考慮各種檢驗的費用及對病人的影響。

2.參與醫療團隊：與醫療團隊中的其他成員（主治醫師、住院醫師、護士、治療師、營養師....）一起工作，實際體驗相互間的相處之道。

3.體會繼續教育的重要性：學習者必須在這一年的期間中，體會自我教育及繼續教育的重要性，才能在日後的專業生涯中，不斷增進知識、提昇技能、改善態度。

在執行上，除了讓接受訓練的第一年住院醫師經由執行病患診療工作，學習到醫療技能之外，必須特別注意的是：評估臨床技能、檢討進步情況。住院醫師與指導醫師之間的互動以及在監督下執行醫療工作的情況是決定訓練成果的主要因素，定期評估學習者的臨床技能、檢討其進步情況並給予回饋，是訓練過程中極為重要的課題。附表 1 至表 3 列示一般醫療訓練的具體內容及定期評估檢討的項目，每位受訓者經過一年的訓練後，都必須具備這些基本的知識、技術及態度。

表 1 一般醫療訓練期間應獲得的核心知識

- 1.疾病的過程及治療方法（尤其是常見疾病、急診疾病或後果嚴重的疾病）。
- 2.人際關係（尤其是病人與其社會環境的關係）。
- 3.常見的內科急症及其處理。
- 4.解除病苦、改善失能（殘廢）。
- 5.復健。
- 6.醫療體系組織與健康照護提供。
- 7.倫理標準與責任。

表 2 一般醫療訓練期間應獲得的診療技術

- 1.常見醫學問題的診斷能力。
- 2.一般疾病及常見急症的處置技術。
- 3.詢問、記錄、判讀常見症狀與徵候的能力。
- 4.確認問題與做醫療決策的能力。
- 5.經由邏輯思考演繹達成結論之能力。
- 6.評斷證據可靠性、治療方法及處置標準之能力。
- 7.與病人及家屬互動時之溝通技術與信心。
- 8.以文字及言語向同事精確表達病患臨床情況的能力。
- 9.有效且適當使用診斷檢驗的能力。
- 10.有效管理時間及處理工作負荷的能力。

表 3 一般醫療訓練期間應養成的醫療態度

- 1.對病人、家屬、同事的關心體恤。
- 2.主動學習的態度。
- 3.對倫理原則的關心以及對醫療專業的價值觀。

參、教學活動

一般醫療訓練的教學活動，涉及學習者、指導者、及病人三者之間的互動。就學習者而言，主要的目標是獲得醫學知識和醫療技能，具體而言，包括下列幾項：

- 一、獲取治療病患所需的認知性知識、醫療態度以及臨床技能。
- 二、以能夠獲得最大程度學習及對病人造成最小程度危險的方式來執行照顧病患的工作。
- 三、熟悉與健康照護系統相關的人事管理、給付方式及有關事項。

就指導者而言，主要的目標是監督學習者，讓他在對病人造成最小程度危險之可能性的情境下獲得最大程度的學習，促進學習者做臨床決策的能力，示範並指導各種常規處理技術，做為學習者角色仿同的典範，提供診斷及處理技術的回饋，介紹健康照護系統的基本概念，評估學習者的臨床技能。

就病人而言，病人是在相信指導者及學習者的情況下接受治療的，病人的需求應列為最重要的事項，病人也應樂於協助學習者獲得所需的專業技能。

一般醫療訓練的實施場所包括病房及門診，近年來，在節省醫療費用的考量下，病人的住院日數逐漸縮短，門診成為越來越受重視的訓練場所。

一、病房的教學活動

在病房裡，指導者的責任是監督病人的醫療及教學，教學的角色很難使學習者滿意，尤其當指導者以「灌輸知識」做為教學方式之時，會使學習者往往視其為妨礙工作。

指導者的教學方式應儘量避免上課及知

識灌輸，而以向學習者提出質問、策激、鼓勵、矯正，以及觀察或示範臨床技術之執行的互動式教學方式。

學習者應能由收集臨床資料、判讀資料做初步診斷，並做治療決策，在此一過程中，其思考方式及對病患處置的想法應與指導者充份的討論及回饋。指導者應就病人的問題做進一步的釐清及深入的探討，給予建設性的批評，刺激學習者的思考，提昇其解決問題的能力，尤其是對病人症狀表徵的判斷、鑑別診斷、以及其他與解決問題相關的事項。

迴診應有明確的目標才不會流於形式，例如，對某一項理學檢查所見做確認，對某一項病史資料做擴展引申，或示範與病人互動的方法。

指導者應注意學習者的特定需求，尤其是在臨床技能的學習方面，應以觀察協助或示範的方式使學習者精確的操作各種臨床技術，保證給予病人高品質的醫療。

臨床推理的訓練是一般醫療訓練中的重要環節，學習者應學習有效率的臨床推理方式：假說演譯法。此一方式的重點在於：在開始詢問病史之後的最初幾分鐘，即由病人的問題，導引出初步的診斷假說，剩餘的時間幾乎都用來確認或否認初步的診斷假說。診斷決策通常基於機率、嚴重度，決定要做那一些進一步的檢驗。處置決策通常基於考量病人的期待，需求及「費用/危險/益處」的考慮。

二、門診部的教學活動

門診部的教學是一般醫療訓練最重要的環節，它對教師、學習者及病人三者都造成特殊的問題與獨特的挑戰。

在門診部，指導者的任務是監視學習者

對病患的診療，評估學習者解決病患問題的能力，給學習者適當的反饋，並做為適當的資訊提供者。這些任務的達成，有賴於指導者與學習者間的師生互動，以及學習者指導者的角色仿同。

在門診部如何達成有效的教學是對教師的嚴峻挑戰，下列五項原則有助於達成有效的教學：

- 一、與學習者達成明確的約定：教師必須於開始教學前，依照學習者的程度、先前的經驗與學習需求，向學習者明確說明學習的目標，時間上的限制也必須事先說明。
- 二、向學習者提出適當的質問：教師要能了解學習者的程度、知識、信心，在教學過程中，就病患的問題及相關的醫學知識向學習者提出質問，來指導學習者。教師提出的問題最好是與問題解決有關的「開放式問題」，避免詢問醫學知識。
- 三、提供必需的資訊：教師做為資訊的來源，自己必須知曉解決病患特定問題的醫學知識，否則將使學習者失去敬意。教師提供的資訊不應是瑣碎的或片斷的知識，更重要的是如何去找到有關解決病患特定問題的知識？搜尋文獻、查教科書、照會其他專家都是提供資訊的方式。教師不可能通曉一切，應該不吝於向學習者說：「我自己也不知道，但可由 找到答案」
- 四、提供適當的回饋：提供回饋是使學習者改變行為、記憶知識、改善進步的好方法，如果不提供回饋的話，學習者的負面行為將持續存在而正面行為則可能消失。學習者對於正向回饋及負向回饋的主動參與，可以使自己成為更好的醫師。教師提供回

饋時，應該使用描述性的詞語，在適當的時間，針對學習者的行為，直截而明確地指出來，不要忘記告訴學習者做對了或做得很好，也不要忘記指出學習者的缺點。

- 五、在教學結束時要做總結：結束教學前對診斷及處理計劃做一簡單明瞭的總結能夠指出學習者必須注意及加強的領域。

肆、教師的責任

一般醫療訓練的最終目標是經由醫師教育來提昇病人的醫療成效、增進病人的利益、促進病人的健康，在一年的訓練期間中，指導者可以看到受訓者的信心增加，成熟度、決策能力、承擔責任的能力也會明顯提昇，對於教師而言，這是最有價值的報償。為了達到上述教育目標，指導教師有責任對學習者提供適時的指導與協助，對學習者的醫療處置給予有效的監督與回饋。

一、指導與協助

在每一個教學的情境都必須設定教學目標，在教學過程中必須協助住院醫師做決策，提昇其信心，使「臨床經驗」與「教育機會」做適當的配合。這一年的臨床經驗對於學習者的終生執業非常重要，許多態度與習慣在這一年之間定型，學習者在這一年的學習成效及經驗成長令人興奮。對指導者而言，很重要的關鍵是決定在這一年之中，應該為學習者提供多少臨床經驗？其範圍及類型如何？什麼樣的臨床經驗最能使受訓者能力提高？應特別注意的教學重點是：診療病例的混合（case mix）與診療技巧的混合（skill mix）是否理想？工作的時數是否恰當？學習者在工作中是否受到指導教師適當的指導及支持？

除了臨床技術以外，與病人的溝通技巧，利用時間的技巧、決定處理事情優先順序的能力，運用醫療資源的技巧，了解決策的倫理觀點等，鼓勵學習者建立終生學習、持續學習的觀念與習慣，也是指導教師在日常教學時必須涵蓋的內容。

二、監督與回饋

這一年的訓練能否達到預定的目標與成效，最重要的關鍵是：教師是否能夠提供適當的監督及回饋。教師必須注意：監督與回饋的實施是否落實？監督的品質是否理想？指導教師必須直接而誠實地向學習者指出其進步的情況、臨床能力方面的優劣點，如何改進缺點？如何提昇一般性的臨床能力？如果受訓者在某一方面的能力未達理想的話要如何加以補強？

指導教師與學習者必須建立積極的互動，在一年的期間中，如果要達到理想的教育成效，指導教師必須每 2 至 3 個月與學習者做一次面談，評估其臨床能力進步的情形，檢視訓練目標是否達成。考核學習者的臨床能力是否有進步尤其必須列為重點，在這方面，護士、病人及其他人員的意見也應列入參考，診療能力的評估是臨床教育中最重要關鍵。

伍、學習者的責任

一般醫療訓練的最主要目標是獲取醫療知識、發展醫療技能並養成醫療態度，具體而言，就是讓學習者養成能夠有效而可靠地評估、判斷、處置、解決病人臨床問題的能力，此一能力源於豐富的醫學知識、有效率的問題解決策略、以及對於知識及技術的不斷改進。此外，良好醫病關係的建立及適當專業態度的培養也是一般醫療訓練的重要部份。

住院醫師的學習方式是主動學習，學習的重點在於將新獲得的知識關聯到原有的知識，亦即將新舊知識整合，連結到更周詳浩瀚的知識網路，提昇自己的思考、推論、決策能力，來解決病人的臨床問題。住院醫師從觀察病人的反應並且反覆檢討整個處置步驟中，解決臨床問題的技能愈趨熟練，愈能做最好的決策判斷，成為練達的醫師。

獲取主動學習的方法及養成主動學習的態度是一般醫療訓練期間學習者最重要的責任，其內容包括自我評估及文獻複習，前者促使自己了解優點及弱點，後者對於獨立思考能力的培養極為重要。

一、自我評估：學習者必須建立在知識、技術、態度三方面的個人標準，藉以獲得高品質醫療及持續進步成長的動力，保證在專業方面的持續發展。首先要建立判斷臨床能力的準則，再收集資料，後者可由標準式的測驗、病患的建言、上級指導醫師的批評等來源獲得。經由這些資料判斷是否符合設定的準則，了解個人的長處及缺點，並採取行動去改善，自我評估是追求卓越的有效技術，必須終生持之以恆。

二、文獻閱讀：閱讀醫學文獻是繼續學習及終生學習的最有用的方法，有效的閱讀能使醫師不致於落伍，對於在偏遠地區執業的醫師或在小醫院工作的醫師尤其重要。閱讀文獻時，必須依據流行病學的基本規則來判斷文獻發表的診斷測驗或治療方法的可靠性和可利用性，在這方面，必須特別重視「實證醫療」（evidence-based medicine）的應用。

The Imperative for the Academic Medical Center and Managed Care Organization Teaching Collaboration

Jeannette M. Shorey, M.D.

Harvard Pilgrim Health Care/Brigham and Women's Hospital,
Boston

Should managed care organizations (MCOs) participate in graduate medical education (GME)? The answer is resoundingly, yes. Increasingly, MCOs are the places to find three essential resources for GME: large numbers of patients, large numbers of competent physicians, and the best settings in which to teach/learn the key competencies critical to effective physician performance in various health care delivery systems. Today, 56% of the insured US populace gets its health care from MCOs, and 87% of the employed US population obtains its health care within MCOs. Ninety-two percent of US physicians have at least one managed care contract and earn 50% of their revenues from these contracts. Veloski et al, in 1996, found that 16% of US medical schools had significant teaching affiliations with MCOs, and an additional 46% had some sort of teaching collaboration. GME collaborations between academic medical centers (AMCs) and MCOs are fewer. We know of nine residency programs that have established substantial curriculum offerings within MCOs. The Pew Charitable Trusts and Robert Wood Johnson-sponsored Partnerships for Quality Education has supported six of those nine large endeavors and has catalyzed lesser GME efforts in another 66 programs. Among these, our program is the most

fully fledged and the most radical in design, committing 60% of the three years of training to ambulatory work within the MCO. We believe our collaboration with the Brigham and Women's Hospital (BWH) has created many valuable innovations that can be generalized to other training programs involving partnerships between academic teaching hospitals and MCOs. I will shortly tell you about our program, and the story of our recent financial turmoil. It highlights some of the basic economic challenges that must be met if high quality MCOs are to participate in GME. HCFA's recent regulatory changes have opened the door to federal support for ambulatory teaching programs; but as our story illustrates, they have not solved the funding challenges.

Should MCOs That Don't Teach Be Taxed" to Support GME?

The American Association of Health Plans (AAHP) is on record supporting a uniform tax for these purposes. Currently, a few MCOs incur expenses for education while most do not. Essentially, this places the socially responsible plans at a market disadvantage. A new approach to financing education at both a graduate and undergraduate level is needed if high quality educational activities are to be adequately supported both within hospitals and MCOs.

Should MCOs Have Freestanding Programs, Partner With Traditional Programs, or Help in Some Other Ways?

There remain very few MCOs who own and manage their own hospitals. Therefore, the infrastructure for freestanding MCO-based residency programs does not currently exist to any substantial extent and does not appear to be on the horizon. Hence, partnerships between academic teaching hospitals and MCOs are critically important collaborations to be developed if we are to train internists adequately for the jobs they will be asked to perform. The current important facts are these: A few MCOs are already committed to teaching; others are approachable on the subject, under the right circumstances. However, the health care marketplace, as you well know, is hotly competitive, and teaching is not the top priority of any MCO. Sustaining programs like ours, and eliciting more widespread teaching collaborations with high quality MCOs will require several important kinds of action:

1. Teaching models must be designed that add clear and demonstrable value to the MCO — ours is one such model;
2. Academic medical centers and hospitals who wish to teach with MCOs must invite full and respectful partnership in these endeavors;
3. Mechanisms to provide fair and realistic financial support for these programs must be developed; and
4. Faculty development programs will need to be put into place in the MCOs.

What Do the MCOs Have to Offer GME?

Why should high quality MCOs be sought out to participate in GME? By their very nature

and design as health care delivery systems, they seek to provide care to defined populations using fixed budgets. They can provide access to large numbers of ambulatory patients, a practical population perspective on medical care, and emphasis on preventive medicine. Many thoughtful individuals have enumerated the competencies that 21st century physicians must master. You will appreciate that the "new" competencies have grown directly out of physicians' needs to work effectively in large healthcare delivery systems — seeking to provide high quality, ethically sound, cost-effective care. Dr. Nicole Lurie has summarized these usefully into nine domains:

1. Health systems finance, economics, organization and delivery
2. Evidence-based, epidemiologically-based medicine
3. Ethics
4. Development of provider-patient relationships
5. Leadership: promoting teamwork and organizational change
6. Quality measurement and improvement
7. Medical informatics
8. Systems-based care
9. Competencies relevant to primary care.

These competencies are the bedrock of successful, high quality MCOs. Those MCOs can be the "learning laboratories" for students and residents wherein experienced physicians demonstrate the practical application of these principles. Partnering with AMC's and teaching hospitals will be critical for both the acute care training that internal medicine residents must experience and for the faculty development work that is necessary to enhance the teaching skills of (many) MCO physicians.

What's In It for the MCOs? What Value Can Participation in GME Provide to MCOs?

I can answer this question based on data we have collected at Harvard Pilgrim Health Care (HPHC) from our clinician-educators, our organization's leaders, and our patients. Uniformly, our clinicians who volunteer to teach tell us they do so because teaching enhances their work life. They are more satisfied with their jobs because they are challenged to stay up-to-date by the questions their residents ask. They are taught by the residents who return to their ambulatory offices, fresh from rotations at the Brigham where they have learned state-of-the-art diagnostic and therapeutic strategies for managing many (sometime esoteric) diseases.

While our medical directors admit that this is difficult to measure, they believe that offering their best clinicians opportunities to teach enhances physician recruitment and retention. Physician retention is a critically important aspect of cost-containment for MCOs. Patient satisfaction and re-enrollment is one of the most critical variables for success in an MCO. In 1996, the HPHC Foundation Board, commissioned a study of patient satisfaction with teaching and research in our organization. We learned that by presenting our teaching and research endeavors clearly to our patients, they distinctly enhance members' perception of the organization's quality and positively distinguish it from its competitors. Another important advantage of our collaborative residency program has been a generally enhanced appreciation of HPHC's physicians and case managers at our partner hospital. These are all important but relatively intangible elements of value that an MCO can accrue by participating in

GME. In capitated health care delivery systems, tangible dollars can be had or saved only by reducing staff costs or ancillary costs. The traditional organization of residency training into block rotations where residents participate on a service, e.g., at the MCO, for only a month or two, cannot allow the MCO to capture the value of their services. In other words, for an MCO to benefit financially by having residents render care to its patients and recoup at least some of the costs of teaching, there must be enough residents present for enough time to allow the MCO to decrease, by some appropriate ratio, the number of its more highly paid, salaried staff positions, and still meet the service requirements of its patients. Patients in MCOs will not tolerate seeing one physician after another, whether resident or staff physician. They and their employers buy and expect continuity of care.

The Harvard Pilgrim Health Care/Brigham and Women's Hospital Primary Care Residency Program

A bit of history: HPHC is an "academically conditioned" MCO. Its founder was the late Robert Ebert, then dean of Harvard Medical School. Teaching, research, and community service along with health care delivery were the mission of Harvard Community Health Plan. Residency teaching has existed within HPHC since the early 1970s. Many of its staff physicians were trained in Boston's AMCs. Initially, HPHC offered sites for both ambulatory primary care and subspecialty care continuity clinics to the housestaff of several Boston teaching hospitals. In the 1980s block rotations in primary care were developed in collaboration with the Brigham. Participants in these rotations did what almost all BWH housestaff did in those years — they pursued

careers in subspecialty internal medicine. Our current program was designed in 1993 in response to a mandate from the HPHC Foundation: Graduate excellently trained primary care internists who have the capacity to be leaders in establishing the best practices in clinical medicine and health care delivery at large — and leave the training of subspecialists to the AMCs who have the best resources for that important work. This program is a true collaboration between its sponsoring partners. Without the joint vision and support from the leaders and faculty at both HPHC and BWH, this program would never have been created and certainly could not continue to exist today. The program does four things in ways that are fairly radically different from most primary care programs:

1. The schedule puts 60% of training into the ambulatory setting.
2. The curriculum emphasizes competencies necessary to manage care.
3. The teaching methodology routinely incorporates principles of adult learning theory.
4. The schedule rebalances the education and service activities of the residents.

Three Year Overview of Residents' Schedule

PGY-1 focuses on acute care skills with interns spending eight months at the Brigham. The first block, however, introduces them to their preceptors and health centers, welcoming them to what will be their primary academic homes. Each resident is paired with one preceptor throughout all three years, and with that person the resident shares an office with two desks, two phones, and two computer terminals. The resident becomes a full partner on the

preceptor's practice team, working closely with the team's nurse practitioners, medical assistants, registered nurses, and other staff physicians.

Typical Ambulatory Week's Schedule

PGY-2 focuses on ambulatory skills. The residents' own patients are the catalysts for their learning. Their patients' problems and stories are what bring life to the seminars which provide the intellectual foundation of the ambulatory program. The residents practice seven sessions each week — four sessions in their own offices and three sessions in the ambulatory specialty offices of internal medicine, surgery, and gynecology that are pertinent to adult primary care. Three half-days each week are devoted to seminars. In each seminar, expert faculty facilitate the residents' unfolding of their patients' problems that are pertinent to the core content of the session. The methodology is one of lived experience, followed by a time for reading and then reflection with peers and an expert about the important issues and learning edges, and then a return to "practice" — literally putting into action the lessons of the seminar that had their origins in the office. The seminars and their timing are as follows:

- Clinical Epidemiology and Preventive Medicine (weekly)
- Psychosocial Medicine, Psychiatry, and Communication Skills (weekly)
- Common Clinical Problems in General Medicine (weekly in 2 settings)
- Medical Ethics and Professionalism (5 part series for PGY-2, projects for PGY-3)
- Leadership and Management for Medical Residents (8 part series for PGY-2)
- Care at the End of Life (5 part series for PGY-2, and hospice experience)
- Caring for Older People (10 part series for

PGY-2 and 3, and extended care facilities experiences for PGY-2)

- Understanding Systems Thinking in Medicine (5 part series for PGY-2 and 3 -- in development)

During three months of PGY-2, the residents continue to hone their acute care skills and leadership skills, serving as the junior assistant residents on the general medical services, the emergency department, and the coronary intensive care unit at the Brigham. PGY-3 continues to focus on ambulatory skills. A set of experiential evaluation exercises takes place at the end of PGY-2 and the beginning of PGY-3. From these and reflections on their learning over their entire time in the program, the senior residents determine both how they will spend their elective practice sessions and on what senior project they will work. A major task of a primary care internist is to manage the care of a panel of patients. Hence, a major task of this residency program is to prepare its graduates for that work. Therefore, elective time is measured in half-days, not block months. If a resident were "away" from the practice for substantial periods of time, it would be the preceptor and nurse practitioner who would be "managing his/her panel," which numbers between 500 - 600 patients by the end of PGY-3. As in PGY-2, three months of PGY-3 is spent at the Brigham, on general medicine services, in the emergency department, and in the medical intensive care unit. That is the structural overview of the program. As all the program directors here well know, the importance of the schedule cannot be overstated. It reflects the core goals and values of the program. In our model, adequate primary care training for general internists requires spending a very substantial amount of time in the

ambulatory world for critically important educational and financial reasons. Educationally, this is essential in order for the residents to

- have enough experience with common ambulatory problems to master the care of patients with these illnesses and psychosocial issues. This is a matter of case-mix and practice; and to
- have enough experience in a place where primary care is highly valued and where their principal role models are practicing primary care physicians. There are abundant data that demonstrate we humans tend to emulate our heroes (and heroines). Primary care heroes are easy to find in high quality MCOs.

Financially, this extended period of ambulatory time allows for the residents to acquire a panel of patients for whom they can genuinely serve as primary care providers. We estimate that if the program were able to grow to at least three residents in each health center training site, this would allow HPHC to reduce expenses by one FTE staff internist at each site, achieving a net cost savings to the organization. This brings us to the budget for this residency. It has been supported from four sources:

- The HPHC Foundation, that in years past has paid for the residents' stipends for the periods during which they worked at HPHC, as well as substantial support for the program's administration;
- BWH support of the residents' stipends for the periods during which they worked at the Brigham, and
- Title VII funds through a grant co-authored with general medicine colleagues at the Brigham — providing support for the seminar faculty;

- In-kind contributions from Harvard Vanguard Medical Associates, providing salary support for the precepting faculty, overhead, and the opportunity costs of teaching.

This past year, both of our sponsoring institutions have posted major financial losses. Most residency programs in the US are facing serious financial challenges. By virtue of having two partners and an atypical distribution of residents' services, we are in double jeopardy. HPHC is contemplating the necessity to reduce its allocation to the HPHC Foundation by one-half in this next fiscal year. BWH has declared that our residents will not be counted under their HCFA cap. The residents' stipend support is the big-ticket item that is especially at risk. Strong philosophical support for the rightness of this model within HPHC and (parts of) the Brigham have helped us identify stipend funding for the three classes of residents currently enrolled in the program. It remains to be seen whether this model can be sustained. It seems quite ironic that the market is demanding exactly the product of our program: highly competent general internists who know how to deliver compassionate, ethically sound, cost-effective care. The distribution of DME and IME dollars for graduate medical education is made on the basis of political decisions, not market forces. Market forces should be working in our favor. However, a combination of market forces, federal regulations, and the complexities of graduate medical education financing have put our program in grave jeopardy. There is another primary care residency program sponsored by HPHC in conjunction with the Mt. Auburn Hospital and the Cambridge Hospital. That program has graduated more than 40 primary

care physicians, several of whom have been hired by HPHC. That program is educationally sound, though not as innovative as the one I have described for you. Its ambulatory training occupies about 30% of the residents' schedules. It is financially sound, largely by virtue of the sponsoring hospital's willingness to fund the residents' stipends. Our program raises serious questions in which I hope the Board will be interested. What is the right balance of ambulatory and inpatient training for internists, especially for those who know, on entering residency, that primary care is the direction in which they want their careers to go? What can and should the Board do to help foster partnerships between AMCs and the nation's high quality MCOs? Finally, how can the Board help academic teaching hospitals carefully evaluate how they allocate their HCFA-funded residency slots?

References

1. The National Survey of Employer-Sponsored Health Plans. William M. Mercer, Inc. New York, New York, 1999.
2. The Socioeconomic Characteristics of Medical Practice, 1997-98. AMA, Chicago.
3. Veloski J, Barzanski B, Nash DB, Bastacky S, and Stevens DP. Beyond HMOs: medical student education in managed care settings. *JAMA* 276:667-671, 1996.
4. Lurie N. Council on Graduate Medical Education Resource Paper: Preparing learners for practice in a managed care environment. U.S. Dept. of Health and Human Services, Bureau of Health Professions, September 1997.
5. Briggs-Style C, Rubin R, and Inui T. The cost of teaching at HPHC.

www.med.harvard.edu/ambulatory/index.html

6. Purdy S, Inui TS, Plaso A, Finkelstein J, Fletcher R, and Christiansen C. Members' perception of research and teaching: a report to the Harvard Pilgrim Health Care Foundation Board. www.med.harvard.edu/ambulatory/index.html

Dr. Shorey practices general internal medicine and works with medical students and residents to learn the practice. She is the Director of the Harvard Pilgrim Health Care/Brigham and Women's Hospital Primary Care Residency Program. Her professional goals are to design and deliver graduate medical education programs that truly prepare young doctors to give comprehensive patient care, and to study and teach strategies to help physicians communicate more effectively with their patients and colleagues. Dr. Shorey directed the primary care residency program at the Beth Israel Hospital, and established the primary care program at the Deaconess Hospital in Boston prior to joining the Department of Ambulatory Care and Prevention of Harvard Medical School and Harvard Pilgrim

Health Care. She has served as a consultant to the Council on Graduate Medical Education (COGME), in the preparation of its 13th Report: Physician Education for a Changing Health Care Environment. Dr. Shorey is a member and leader of the American Academy on Physician and Patient, serving as its Vice President since 1996 and as a member of its Board of Directors. She received her BA from Wellesley College and her MD from the University of Pennsylvania School of Medicine and completed her residency training at Brigham and Women's Hospital in Boston.

This article was obtained from The American Board of Internal Medicine website with author's approval

The American Board of Internal Medicine
510 Walnut Street, Suite 1700
Philadelphia, PA 19106-3699
(215) 446-3500 or (800) 441-2246
FAX (215) 446-3470

參與者名單

王乃三	成大醫學院院長	周松男	台大醫學院婦產科教授
王世杰	三軍總醫院(科主任)	周稚傑	三軍總醫院主治醫師
王先震	軍醫局醫療保健處處長	林中生	中山醫學校長
王秀伯	台大醫院急診醫學部主治醫師	林孝義	台北榮總過敏免疫風濕科主治醫師
王維典	台大醫學院社醫科講師	林其和	成大醫學院小兒科教授
田蕙芬	台大醫學院內科教授	林明正	中山醫學院附設孫中山先生紀念醫院代主任
朱志純	三軍總醫院(科主任)	林明燦	台大醫學院外科助理教授
朱宗信	台大醫學院內科助理教授	林東燦	台大醫院檢驗醫學部副教授
江福田	台大醫學院檢驗醫學科教授	林芳郁	台大醫學院急診醫學科教授
何弘能	台大醫學院婦產科教授	林俊立	台大醫院內科部副教授
何博基	東和婦產科醫院院長	林國川	彰基醫務副院長
何善台	三軍總醫院(教學副院長)	林慧玲	台大醫學院藥學系副教授
何饒通	陽明大學醫學院院長	邱台生	台北榮民總醫院護理部督導長
吳木榮	台大醫院病理部主治醫師	邱泰源	台大醫學院社醫科助理教授
吳德朗	長庚大學代理校長	邱浩遠	成大醫學院外科教授
呂志成	三軍總醫院(主治醫師)	邱艷芬	台大醫學院護理系副教授
呂碧鴻	台大醫學院社醫科主任	侯明志	台北榮總胃腸科
李文貞	台北榮民總醫院護理部副護理長	侯勝茂	台大醫學院醫學系教授
李世俊	三總外科主任	施富金	台大醫學院護理系副教授
李汝禮	中華民國開業醫所協會理事長	查岱龍	三軍總醫院(主治醫師)
李明亮	慈濟醫學暨人文社會學院校長	洪瑞松	中國附醫西醫副院長
李源德	台大醫院院長	胡文郁	台大醫學院護理學系講師
李繼源	三軍總醫院(科主任)	胡俊弘	台北醫學校長
杜逸松	衛署台北城區	孫維仁	台大醫學院麻醉科副教授
沈柏青	高醫醫學大學肝膽外科主任	徐永年	行政院衛生署豐原醫院院長
沈振庭	三軍總醫院(主治醫師)	徐建鵬	三軍總醫院(行政參謀)
沈國樑	國防醫學院院長	高明見	台大醫院神經外科教授
汪志雄	三軍總醫院(部主任)	高美英	台大醫學院社醫科助理教授
周先溫	台南診所醫師	張 珩	新光醫院教育委員會副主任委員
周明智	中山醫學院附設孫中山先生紀念醫院	張立平	三軍總醫院(主治醫師)

張杏初	三軍總醫院(科主任)	黃燦龍	長庚醫院外科主任
張金堅	台大醫學院外科教授	楊大羽	台中榮民總醫院
張博論	陽明衛資所副教授	楊泮池	台大醫學院內科主任
張聖原	三軍總醫院院長	葉春長	三軍總醫院(主治醫師)
張德明	三軍總醫院(科主任)	雷永耀	台北榮民總醫院外科部主任
曹龍彥	小兒科醫教會主任委員	廖文進	三軍總醫院(主治醫師)
盛望徽	桃園醫院 台大社區醫療主治醫師	廖毓甄	三軍總醫院(行政參謀)
莊萬龍	高雄醫學大學醫學系內科	趙仲芳	台泥竹東廠醫務室
許寬立	台大醫學院內科副教授	趙培傑	三軍總醫院(主治醫師)
許權振	台大醫學院耳鼻喉科副教授	劉曉東	三軍總醫院(主治醫師)
陳五常	國泰醫院小兒科主治醫師	潘偉豐	成大醫學院教務分處主任
陳文侯	崇安診所院長	蔡文展	高雄醫學大學醫學系內科
陳文鐘	台大醫學院急診醫學科副教授	蔡長海	中國醫藥學院附設醫院院長
陳世杰	台大醫院影像醫學部主治醫師	蔡哲嘉	高雄醫學大學醫學系內科
陳石池	台大醫學院急診醫學科助理教授	鄭惠信	林口長庚醫院內科主治醫師
陳再晉	行政院衛生署保健處處長	鄭澄寰	三軍總醫院(科主任)
陳明豐	台大醫學院內科教授	盧章智	三軍總醫院(主治醫師)
陳維恭	中國醫藥學院附設醫院急診部主任	蕭光明	台北榮民總醫院胸腔部醫師
陳慶餘	台大醫學院家庭醫學科主任	賴明亮	成大教學副院長
陳瑩霖	高雄醫學大學代理校長	賴振宏	三軍總醫院(主治醫師)
陳震寰	國立陽明大學社會醫學科主任	戴玉慈	台大醫學院護理系副教授
陸希平	台大醫院外科部講師	謝正源	三軍總醫院(教學組組長)
喻永生	三總小兒部主任	謝博生	台大醫學院院長
喬連仲	喬安診所	謝瀛華	台北醫學院家庭醫學科主任
曾麗慧	台大醫院優生保健部主治醫師	韓良俊	台大醫學院牙醫學系教授
程文俊	林口長庚醫院內科部主任	關皚麗	高雄醫學大學醫學系外科
童吉士	國防醫學院教務處	嚴孟祿	台大醫院婦產部主治醫師
黃天祥	台大醫學院內科教授	蘇逸玲	台北榮民總醫院護理部護理長
黃尙志	高雄醫學大學醫學系內科	鍾育志	高雄醫學大學醫學系小兒科
黃信彰	台北榮民總醫院家醫		
黃清水	國泰醫院醫務副院長		
黃裕勝	高雄醫學大學醫學系外科		
黃碧桃	台北榮總小兒科		

醫學教育研討會

Medical Education Conference

籌備委員會 Organizing Committee

召集人 Chairman

呂碧鴻 Bee-Horng Lue, M.D.

林肇堂 Jaw-Town Lin, M.D.

委員 Members

李明濱 Ming-Been Lee, M.D.

黃水坤 Shoei K. Stephen Huang, M.D.

楊培銘 Pei-Ming Yang, M.D.

吳美環 Mei-Hwan Wu, M.D.

黃冠棠 Guan-Tarn Huang, M.D.

高美英 Meen-Ying Kao, M.D.

執行秘書 Secretary

王維典 Wei-Dean Wang, M.D.

編輯處：台大醫學院社會醫學科

Secretariat :Department of Social Medicine, College of Medicine , National Taiwan University