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# Analysing health systems: a modular approach

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# Analysing health systems: a modular approach

## **Abstract**

Book review of: *Analysing health systems: a modular approach* Avi Yacar Ellencweig

## **Keywords**

analysing, modular, health, approach, systems:

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\$22 million for their accommodation and associated expenses. More than 70 per cent were treated in public hospitals'. The Commission estimated that an additional \$10 million is paid annually for health services by the 56 000 foreign students in Australia. No estimate is provided of the proportion of this cost paid for by relatives in Australia, by Australian aid, and by welfare and community organisations, that is, the proportion providing no net input of capital. Of interest was that one third of those obtaining medical visas to enter Australia came from New Caledonia, whose citizens can readily afford to do so as they pay over eight per cent of their salaries in health insurance!

Exports by nature are income-generating. Thus, it is of interest that among the findings of the Commission was the apparent subsidising of treatment provided to foreign patients because services were effectively discounted, that a 'disproportionately high share of public hospitals' bad debts were those incurred by foreign tourists and business people, and that 'charges levied on fee-paying foreign students for compulsory insurance... appear lower than required to meet the cost of benefits provided'.

Factors identified as 'impeding' the export of health services included: the criteria for granting medical visas, difficulty in guaranteeing access to public hospitals (and clearly the Australian public would not tolerate their waiting in line for service to allow foreign patients to queue-jump), constraints on the training and accreditation of foreign doctors, the professional links between doctors in Australia and those in foreign countries from whom referrals flow, and regulations which restrict doctors' advertising. Recommendations relating to these impediments are made.

'A general ambivalence in the community regarding the export of services' was also raised. I would suggest that export of health services is not a topic that the 'community' even considers. The greatest impediment to increasing income generation in this field is the failure of the government to encourage the real potential for export in the development and marketing of health technology and expertise.

In summary, the Commission concludes that there is but 'a minor role of exports in Australia's health care system' and provides some suggestions to improve the 'inefficiencies in the domestic health care system [which] are perhaps the major impediment to the efficient export of health services'. The only 'exports' addressed by the Commission are what we do to those we import for treatment; the potential earnings for exported health technologies and expertise are ignored.

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**Analysing health systems: a modular approach**  
Avi Yacar Elleneweig. Oxford: Oxford University Press, 1992. 348 pp, index, \$130, ISBN 019 262085 1

This book is intended mainly for health services planners and other public health professionals who are involved in the evaluation of health care services. Although most of the examples are from the international health literature, as the author notes in the preface, a much wider audience may find the book useful, as all health professionals are involved in some decision-making processes.

The main premises of the book are that we must always compare health systems—cross-nationally, cross-regionally and longitudinally—to understand our own health system

and learn from experience, and that previous attempts at providing a framework for comparing health systems have been either too simplistic or too conceptual. The 'modular approach', based on a systems model of health care, is proposed as a possible solution. The author argues that instead of attempting to compare health systems, health systems' 'modules' should be compared. Input modules (for example, socioeconomic development, physical resources), process modules (for example, health care organisation) and outcomes modules (for example, health outcomes and health system outcomes), can be combined as needed to solve problems of various sizes.

Although the author communicates a new framework for comparative health research and its theoretical basis and concepts, the main value of the book is that it's practical. The book outlines the tools to operationalise its concepts: appropriate indicators must be selected, measured and compared between countries, regions and health systems. For example, to evaluate the 'health outcomes module', indicators for mortality, morbidity, disability and positive health (well-being) must be compared; the 'health care organisation module' uses indicators for equity, appropriateness of care and accountability; and the 'process of health care module' uses indicators for utilisation, accessibility, quality assurance and ethical issues in utilisation.

One of the advantages of using the 'modular model' is that if data are missing or inappropriate for answering the given question, the model doesn't collapse, as those modules for which data are available and appropriate can still be compared.

The book is divided neatly into three parts and 13 chapters. The first part deals with concepts and theories. In the second part, each chapter deals with one or more modules, first conceptually and then, by selecting appropriate indicators, the concepts are operationalised.

In the third part, potential applications of the 'modular approach' are described. For example, Chapter 10 describes a number of studies testing hypotheses that inputs and processes of various health systems affect their health outcomes and Chapter 11 describes comparisons of a number of modules across three national health systems at different stages of development. I must admit I found these potential applications a bit less innovative than I'd expected, which could well be my ignorance of what is currently 'state of the art' in comparative health research. The author unashamedly recognises, and was motivated to write this book by, the need for development of the scientific basis with which to evaluate health care systems.

Basic epidemiological concepts, for example validity, measurement and reliability, are described, as are basic concepts of needs assessment and economic evaluation. However, the book provides only a methodological overview as it is not intended to be a comprehensive and detailed methodology textbook. Instead, appropriate methodological texts and papers are adequately referenced.

Descriptions of common sources of bias in analyses of aggregate data, for example 'ecological fallacy', serve as a warning to health care system evaluators. The book provides many valuable hints about how to avoid inappropriate and invalid comparisons and how to choose and use indicators appropriately.

Although the 'modular approach' is presented as a novel idea, the book provides numerous examples, mainly from the international health literature, of previous comparisons of health systems which fit the modular model. The modular model builds on previous theories and practices, bridges together several existing models and functions by using indicators which have been described elsewhere in the literature.

The index is clear and each chapter includes an extensive bibliography. The appendix is particularly useful. For each of the eight modules, the concepts and basic indicators are listed. Although not all-inclusive, the appendix could stand alone as a valuable quick reference for health planners and other public health professionals.

The last chapter begins, 'For those looking for ways to simplify the study of health systems and to benefit from easy comparisons, this book brings no salvation' (p. 317). These words could be no further from the truth. The author makes a passionate plea to health system planners and public health professionals to increase their use of health system comparisons. He attempts to and succeeds in making comparisons more user-friendly. Rather than presenting new methodologies, the author provides a critical overview of existing methodologies and indicators, hints on their use and how to avoid their abuse. That the referenced methodologies and indicators are imperfect is also a plea for more methodological development.

Although written particularly for those working in the field of international health, the concepts and proposed indicators are generic to the evaluation of health care systems at any level. I recommend this text to all health planners, epidemiologists and public health professionals interested in health services evaluation.

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### Eye care in developing nations

Larry Schwab. Oxford: Oxford University Press, second edition 1990, 195pp, index, ISBN 0 19 261930 6

This excellent and readable book gives a practical guide to the management of common eye conditions in developing nations where medical manpower and technology are limited. It would admirably serve as a reference book to allow the nonspecialist health worker to develop skills in eye care and to recognise and treat common eye conditions. It is intended for those with some medical training—medical assistants, nurses and general physicians, and could serve as a textbook for their training under the guidance of an ophthalmologist.

The book commences with a chapter on public health ophthalmology in which the community scope of eye health is described and the community and public health approach to the prevention of blindness outlined. This is followed by clear and concise descriptions of the anatomy and physiology of the eye, and on the principles and techniques of eye examination.

Succeeding chapters then address the diagnosis and management of common eye conditions in the developing countries. The major causes of blindness (cataract, trachoma, nutritional blindness and onchocerciasis) are discussed in detail. The book rightly devotes considerably space to the management of cataract, which although being surgically curable, remains the commonest worldwide cause of blindness. Guidelines for the medical assistant in the appropriate selection and preparation of patients for surgical cataract extraction are given. The operative tech-

nique is described in extensive detail, including potential complications and their management. All other common eye conditions are discussed, including ocular infections, especially keratitis, glaucoma and trauma. A most valuable chapter is included on simple techniques for the prescription of spectacles including aphakic lenses.

Throughout, the text gives a clear account of the practical techniques of diagnosis and management. Of particular interest is the emphasis given to the low technology approach through inexpensive methods of diagnosis and treatment and innovative solutions to problems of limited resources. Clearly surgeons in the developing nations have to be great improvisers and the book gives descriptions of the resourceful manufacture of simple instruments such as the use of a kitchen spoon as an eye guard during lid surgery, a paper clip to make a simple lid retractor to hold the eyelids open, cutting six surgical blades from a razor blade, and using the car battery to provide an operating light. It is clear that the author is imparting tips gained through long years of personal experience in making do when resources are limited.

Apart from full descriptions of the techniques of cataract extraction, instructions are given for the performance of common eye operations, including lid surgery, to correct trachoma. Details of several useful but basic procedures which are mentioned in the text are not given however: the technique of retrobulbar injections for ocular anaesthesia and the relief of pain in a blind eye, or of tarsorrhaphy used to prevent corneal exposure and prevent blindness in leprosy.

Understandably the subject is large and this book is not intended to be a complete manual in either eye diseases or in ocular procedures and thus it must frequently be limited to indicating what should be done, rather than equipping the worker not trained in eye care with sufficient knowledge.

Overall the text is readable. Ophthalmic vocabulary is used but all specialist terms are explained in clear general terms in the excellent glossary which precedes chapter 1. The author has chosen a fluid descriptive approach which makes the text quite dense and scanning for a summary of key features is difficult. It might have been of benefit to use point form at times, for example, to list disease features, or to structure the stages of such procedures as cataract extraction. The book is illustrated with black and white photographs showing both ocular conditions and general scenes and sketches which are particularly useful to clarify anatomical details. Illustrations could however have been more numerous, especially to show techniques.

The index is simple but extensive and there is an excellent series of appendices covering diagnosis of the red eye, stock cupboard lists of essential ocular medications and instruments, and lists of international organisations.

This book is small and portable yet adequate in covering all common eye conditions. It is highly recommended to all nonspecialist health care professionals working in a developing nation who are interested in primary eye care and preventive ophthalmology.

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