Information and research for decision-makers
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Experience gained in Singapore shows that, as costs rise and increased emphasis is placed on productivity and efficiency, major advances in health can be expected to come predominantly from improvements in the planning and management of services, based on reliable information.

Like all planning processes, health planning requires reliable information. Decision-making by providers of health care should be supported by information that is timely, relevant and complete, allowing services to be run efficiently and cost-effectively and contributing to the achievement of policy and planning objectives. Such information also makes it possible to evaluate services, anticipate the needs of communities, and assess improvements in health which are attributable to interventions.

Information that is gathered should be user-oriented and designed to meet the needs of service management, planning, policy formulation and medical audit. It should be periodically reviewed so that the evolving requirements of administrators and planners can be met.

Cultural acceptability

In Asia as in other parts of the world, communities are steeped in sociocultural beliefs and practices, and policy-makers and administrators have to find ways to make health messages and programmes a part of the local culture if they are to be accepted by the general population. In an era of largely noncommunicable diseases and newly emerging infectious diseases, personal responsibility for health is essential, and there is an overriding need to empower people to make healthy choices and decisions. Authorities and organizations concerned with health and social welfare should provide people in diverse cultures with information, motivation and supportive environments, and encourage them to accept healthy and safe living as a norm. International cooperation is essential, given that diseases cross frontiers and that their spread is facilitated by the large populations in the region and extensive tourist activity.

Applied research, targeted at areas of high patient load so as to achieve maximum returns, is particularly necessary in Asia. The rise of noncommunicable diseases to epidemic proportions, and the newly emerging and re-emerging infectious diseases, including AIDS, sexually transmitted diseases, malaria and tuberculosis, are among the problems facing research workers. Studies are needed on social values and mores, on the responses of
populations to rapid change, and, in order to ensure equitable access to care, on the operational aspects of health systems. The limited resources available for health care and research in many countries of the region make it especially important to work out cost-effective solutions.

**Singaporean solutions**

Computerization has made it possible to process data rapidly and to obtain accurate information more quickly than ever before. Singapore's computerized health care information system, Medinet, links government and private organizations and provides a national database on health. This has enhanced planning and audit capabilities for policy-makers, hospital planners and medical professionals.

Medinet's Central Claims Processing System provides an abstract on every hospitalization and surgery case, with information on the utilization of the health care service, the disease conditions treated, and the procedures and interventions carried out. The principal physician or surgeon managing each case is identified. Invaluable information is available on rates of intervention for different disease conditions and categories of patients defined according to their pay status. Intervention and management outcomes for individual doctors can be analysed and remedial measures taken if necessary. Financial data on hospital and medical bills are obtained for over 70% of inpatients and day surgery patients who use the national personal savings and health insurance scheme for reimbursement of their hospital charges. Information for planning of cost control thus also becomes available.

With such a comprehensive and integrated database, several clinical indicators can be put in place as an aid to monitoring and evaluating the quality of important care and support activity. They act as process or outcome indicators, identifying specific areas for detailed study and evaluation. The Medinet database greatly facilitates the conduct of medical audit in Singapore.

Standards or guidelines are drawn up to deal with problems identified by the audit programme and are disseminated as professional or practice circulars to all organizations likely to benefit from them. They can be incorporated into the training of medical students and house officers and into continuing education programmes for doctors and other health professionals.

Surveys of the broader quality of service are also carried out as part of the health information system. Among other things they cover waiting times for service, which are compared annually with operational targets. Feedback on services is also obtained from patients and evaluated, and on this basis recommendations are made and implemented to improve the services.

The leading causes of ill-health in Singapore are noncommunicable diseases such as ischaemic heart conditions, stroke, cancer, diabetes and high blood pressure, which are largely related to lifestyle. Traditional lifestyles and diets have been
largely abandoned by Singaporeans. The rapid socioeconomic development of the past 35 years has been accompanied by a marked increase in the consumption of foods high in saturated fats and processed carbohydrates and low in natural fibre, and by the development of sedentary lifestyles, obesity, cigarette smoking and increasing alcohol consumption. The change in the pattern of diseases has been exacerbated by the rapid ageing of the population, associated with declining fertility and improved health.

In 1992 a ten-year programme was launched with the aim of diminishing the levels of lifestyle-related risk factors for important diseases. Targets were set for achieving this. Evaluation involves five-yearly epidemiological surveys, in which measures are obtained of both the risk factors and the diseases. The first survey, providing baseline data, was conducted at the outset of the programme, and the same cohort of respondents will be followed up in 1998. The programme is also evaluated through disease registers for cancer, heart attacks, congenital birth defects and other leading causes of ill-health. The registers provide early and sensitive indicators of disease trends. A reduction in the incidence of these diseases demonstrates the effectiveness of disease control programmes such as those concerned with prevention, improved treatment and care.

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**Research methods – example of the menopause**

As in all research, the methods used in the design, measurement and analysis of studies of the menopause are primary determinants of the validity of their findings. In menopause research, the most highly regarded studies use descriptive and analytical epidemiological methods and controlled clinical trials. [Descriptive studies include retrospective, cross-sectional and prospective research designs; analytical epidemiological studies include both cohort and case-control designs; clinical trials should be based on the principle of random assignment.] Qualitative methods of data collection and presentation are also sometimes needed. ... The choice between qualitative and quantitative research designs depends on the nature of the research problem, but some problems are best investigated using two or more methods.