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Special Feature

54th Annual Congress of Japan Hospital Association/
AHF Symposium
(July 2, Yokohama)
“Dilemmas Facing Asian Hospitals and Their Possible Countermeasures”
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Japan Hospital Association is committed to contributing to society by enhancing hospital services in Japan. This journal introduces the activities of the Association and healthcare in Japan to the world.

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Copyright 2004 Japan Hospital Association
The Japan Hospital Association renewed its executive body this April, and has begun operating under a framework consisting of six vice chairmen. In order to provide reliable medical care, we are committed to pursuing both continuity and reform in improving hospital healthcare and ensuring medical safety.

Our basic action guideline for the period from 2004 to 2006 calls for the effective implementation of the following four policies: (1) formulating and proposing hospital medical care policies, (2) strengthening cooperative ties between hospital organizations, (3) promoting coordination with administrative institutions and the Japan Medical Association, and (4) forming measures to revitalize our internal organization. We intend to fulfill our responsibility to the general public, patients, and Association members through our efforts in addressing the above policies. The six vice chairmen will each assume leadership of a committee and work toward achieving the goals of the action guideline. The six committees are: (1) committee for hospital medical care policies, (2) committee for medical care quality (new), (3) committee for hospital management, (4) committee for business expansion, (5) committee for information dissemination, and (6) committee for general coordination and policy-making. The committee for medical care quality was newly established as a committee having great importance. The other five committees are the result of a consolidation of previous committees and study groups. We also reviewed the focus of those committees and newly included DPC and regional medical care as priority issues. We will strive to make most of limited time and money to examine critical issues intensively and formulate necessary policies as a hospital organization, with the objective of reexamining the medical care system in 2006. To this end, we are also working to create a mechanism that would allow the accumulation and analysis of necessary data and the opinions of learned individuals to be reflected in the activities of the Japan Hospital Association.

A picture is worth a hundred words. An idea is worth a hundred pictures. And an action is worth a hundred ideas. We will put our words into action to achieve our goals based on an accurate knowledge of the actual state of the medical field. At the same time, as we believe it is important to increase transparency of the operations of the Japan Hospital Association by widely incorporating the opinions of our members, we sincerely ask for you kind understanding and cooperation in our activities.
SPECIAL FEATURE

Dilemmas Facing Asian Hospitals and Their Possible Countermeasures

54th Annual Congress of Japan Hospital Association
(Congress President, Akira Tsuchiya)
July 2, 2004, 3:00 – 5:00 pm
Pacific Convention Plaza, Yokohama, Japan

Asian Hospital Federation
Moderator, Hiroshi AKIYAMA
(Chairman, International Liaison Committee, Japan Hospital Association)

Problems Facing Korean Hospitals and Possible Countermeasures
Kwang-Tae KIM (Immediate Past President of Korean Hospital Association/
Present Chairman of IHF Congress Preparatory Committee)

Patient’s Safety and Hospital Administration
Wen-Ta CHIU (Executive Board Member of Taiwan Hospital Association)

Hospital Restructuring: Strategies for Performance and Quality Improvement in Mongolia
Sodov SONIN (President of Mongolian Hospital Association)

Meeting Increased Demand
Andrew BLAIR (President of the New Zealand Private Hospitals Association)

Post SARS – A New Norm in Hospital Services in Hong Kong
Lawrence LAI (Immediate Past President of Asian Hospital Federation)

Overview of Healthcare Challenges*
Ridzwan BAKAR (President of Asian Hospital Federation & Association of Private Hospitals of Malaysia)

Special Comment*
Takao TAKEDA (Vice President of Japan Hospital Association)

* Paper not submitted
Welcome to the 54th Annual Congress of Japan Hospital Association/AHF Symposium

Hiroshi AKIYAMA

The Japan Hospital Association, as the only member of the Asian Hospital Association (AHF) in Japan, has long maintained an intimate relationship with other AHF member hospital organizations and has been continuously exchanging views with them over the years. Through the courtesy of Mr. Akira Tsuchiya, Congress President, the annual AHF Symposium was held in conjunction with the 54th Annual Congress of the Japan Hospital Association.

Healthcare and social welfare systems and their actual practices in the Asian countries greatly vary according to country. At the same time, in many respects they also differ from the systems and practices of the Western countries as presented by OECD data. Therefore, it is important for us, as representatives of Asian countries, to have an accurate understanding of the healthcare environment in Asia that is clearly different from the situation surrounding the International Hospital Federation (IHF).

The objective of this symposium is to gain a broad understanding of dilemmas confronting hospitals in the Asian countries and to discuss possible countermeasures for them.
Problems Facing Korean Hospitals and Possible Countermeasures

Kwang-Tae KIM
Immediate Past President of Korean Hospital Association / Present Chairman of IHF Congress Preparatory Committee

Abstract

Korea has a unique health care system, of which the private sector comprises most of the country’s health resources: 88% of the beds and 91% of specialists in Korea, but are funded by public financing, such as national health insurance and the national aid program. However, the public financing pays only 50% of actual costs and the patient’s co-payment is still high.

Healthcare organizations in Korea are categorized into four types; tertiary care hospitals, general hospitals, hospitals and clinics by scale of operator: number of beds. General hospitals must have 100 beds and over, and compulsorily specialties in internal medicine, surgery, obstetrics-gynecology, pediatrics, dental service, other ancillary service units and an emergency care unit.

There are many challenges facing the Korean healthcare system, such as reformation of primary healthcare system, enhancing hospitals’ competitiveness, and permission of for-profit hospital, introduction of private health insurance, enhancement of geriatric care.

These challenges can be resolved with long-term vision, willingness and strategies of the Korean government to ensure equitable financing and access to healthcare, combined with the active participation and utilization of the private sector.

SYMPOSIUM PRESENTATION

Korea has a unique health care system in which services are provided almost entirely by the private sector, but are funded by public financing.

The private sector comprises most of the country’s health resources: 88% of the bed stock and 91% of specialists in Korea. Moreover, the private sector covers 93% of ambulatory care and 90% of inpatient care for insured patients, as well as 70% of ambulatory care and 50% of inpatient care for uninsured patients. However, the main financial resources of the private sector come from public financing, such as national health insurance and the national aid program. Therefore, the public health sector in Korea is competing with private healthcare service providers in the same marketplace.

The Korean healthcare system is highly dependent upon public financing, with national health insurance and the medical aid program being main resources. However, this system only pays 50% of actual costs and the patient’s co-payment is still high. Physicians and healthcare providers are obliged to follow a set fee schedule. Nevertheless, there is no private health insurance, which is different from commercial insurance product.

Healthcare organizations (providers) in Korea are categorized into four types; tertiary care hospitals, general hospitals, hospitals and clinics.

1. Clinics are permitted to operate 29 or under less beds, and most are run by specialists as a solo practice. In 2002, these clinics treated 16.4% of inpatients and 83.1% of outpatients in total.

2. Hospital has over 30 Beds.

3. General hospitals must have 100 beds and over, and compulsorily specialties in internal medicine, surgery, obstetrics-gynecology, pediatrics, dental service, other ancillary service units and an
emergency care unit. General hospitals with 300 beds and more must operate an intensive care unit.

But, there is no clear classification according to the ALOS (average length of stay). Also, there is no significant differentiation in the complexity of inpatients between clinics and general hospitals with 300 and less beds.

In other words, clinics and small general hospitals share the same type of patients. Ambulatory care units focus on medication but pay less attention to disease prevention and health promotion.

All Korean healthcare facilities are mandated to accept national health insurance. Patients are free to choose healthcare institutions and physicians, but physicians are strictly prohibited to refuse patients. Most private hospitals provide similar services to public hospitals. Also, hospitals compete for the same patients as clinics, which charge patients even less co-payment in comparison with hospitals.

Korea's reimbursement policy favors ambulatory care. According to the 2002 national health insurance statistics, 73% of reimbursements were for the ambulatory care, which includes pharmaceuticals. The remaining payments were for the inpatient care. In this context, healthcare accessibility in Korea is comparably easy. The average number of annual physician visits per capita is 12, which is the highest figure among those countries with 6% expenditure of GDP on healthcare. Also, there is no waiting list for elective surgery, which is a unique feature of Korea compared to other countries.

Consequently, the unfortunate victim of the Korean healthcare system is the private hospital. Its bankruptcy rate is very high. This is allegedly caused by an unrealistically low fee schedule.

In this circumstance, the Korean healthcare system is facing dilemmas such as the consumer’s high expectation for healthcare, responses to variations in demand, quality of care, patient safety and satisfaction. Specifically, equity concerns exist in catastrophic care and among rural residents, the poor, the elderly, and so on. However, the government still regards private healthcare providers in the Korean as profitable.

As suggested by the World Bank, allowing the private sector to engage actively in the healthcare delivery system might improve the quality of services, expand the supply of key health goods and services, remove unnecessary burden from the government, and to increase utilization of health services.

The Korean government firmly maintains the policy of the public sector providing health services and has a radical plan to increase the share of the public sector’s bed stock by 30% and improve the function of disease prevention and health promotion by the community health centers.

There are many challenges facing the Korean healthcare system. First, primary healthcare must be a top priority. For this, the role and function of clinics has to be changed to ambulatory care.

Second, hospitals need to become more specialized and have the ability to compete. Specialty care, emergency care and intensive care units should be established based on individual regional demands rather than by regulation.

Third, it is time to allow hospitals to become for-profit entities, which would enable them to meet various specific healthcare needs.

Fourth, private health insurance should be permitted.

Finally, geriatric care should be enhanced by implementing new residential and community services such as long term or home care services.

These challenges can be resolved with long-term vision, willingness and strategies of the Korean government to ensure equitable financing and access to healthcare, combined with the active participation and utilization of the private sector.
Abstract

In November 1999, the Institute of Medicine (IOM) reported that about 98,000 patients die in U.S.A. as the result of medical errors in hospitals each year. This critical issue of medical errors and patient’s safety has received much attention in the world.

Many countries including the USA, the United Kingdom, Australia, New Zealand and Japan, etc., have launched initiative programs to reduce medical errors and to improve patient’s safety. In Taiwan the patient’s safety program has started since February 2003 when a national patient’s safety committee was established in the Department of Health (DOH), Executive Yuan, Taiwan. In November 2003, the National Health Research Institute (NHRI) of Taiwan has held a nationwide conference for health policy. The consensus how to reduce medical errors and to improve patient’s safety was reached at this meeting.

The most significant function of medical institutions is to save patients’ lives. For the past two years, we have found that the rates of medical errors have been constantly increasing since medical staffs over-rely with the monitoring of equipment, and that the relationships between doctors and patients are worsening. Although implementing patient’s safety program is difficult, we should put our efforts on all the medical aspects practice, the medications, policies and society.

In England

In 2001, Vincent and his colleagues discovered that about 11 per cent of the inpatients had medical adverse events, but that 50 per cent of their medical adverse events could be prevented.

In Australia

In 1995, Wilson and his colleagues discovered that 16.6 per cent of the acute inpatients had medical malpractice. This finding has brought up some awareness of the Australia authorities and the public attention. Over the next five years, they have put efforts to improve and reform patients’ safety. In January 2000, Medical Quality Australian Council of Safety and Quality on Health Care was found. The main purpose of the Council was to establish medical reporting system and to improve medical safety. The research findings showed that only 10 percent of causes of adverse events among acute inpatients were reported annually, and that 50 per cent to 80 percent of them were preventable.

In Japan

In January 1991, two patients accidentally received wrong operations in Yokohama National University affiliated hospital. This incident has raised the consciences of the public, therefore, the health care authorities started to focus on improving of patients’ safety. In the following year, the Ministry of Health announced an Act on Patients’ Safety Action (PSA), and proclaimed the year of 2001 as “the year of patient’s safety advancement”, featuring “10 essential points of patients’ safety”.

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In 2003, Joint Commission on Accreditation of Healthcare Organization (JCAHO) in the U.S.A proposed six national patients’ safety goals:

1. to improve the accuracy of patients’ identification;
2. to improve the effectiveness of communication among caregivers;
3. to improve the safety of using monitor-intensive medications;
4. to end wrong operations on body sites, patients, and procedures;
5. to improve the safety of using infusion pumps; and,
6. to improve the effectiveness of clinical alarm systems.

Taiwan — Ten Recommendations in 2004

In 2004, a national patients’ safety committee was established in DOH. In November 2003, NHRI held a nationwide conference for health policy. The priority to reduce medical errors and to improve patients’ safety was initiated at the conference. Ten recommendations were made to all hospitals: (1) to establish patients’ safety committee and officer in each hospital; (2) to start medical errors reporting system; (3) to set patients’ safety indicators and guidelines; (4) to cultivate patient-centered organizational culture; (5) to instruct patients’ safety to the public; (6) to educate patients’ safety for medical professionals; (7) to implement patients’ safety informatics (PSI); (8) to set a procedure to reduce medication errors; (9) to control nosocomial infection; (10) to assure safety for medical process and facilities.

1. Patients’ safety committee and medical officer for each hospital

All medical institutes should establish a patients’ safety committee, to supervise both administrative and clinical safety procedures. Most health institutions have various committees to over-see the quality of healthcare and patients’ safety. Although each committee meets regularly, the horizontal integration is lacking. The elements of patients’ safety committee are 1) to integrate of all patients’ safety-related committees, 2) to safety enact related policies, 3) to set up patients’ safety indicator system, 4) to implement training programs for improving patients’ safety, 5) to integrate all reporting systems, 6) to re-examine patients’ safety-related adverse events in healthcare system.

2. Medical error reporting system

The objective of patient safety committee is to set up medical error reporting systems. Based on the idea of continuous quality improvement (CQI), the committee may carry out patients’ safety related policy, and reinforce the patients’ safety management system, to build a risk-free medical environment. We use Benchmark (BMK), Quality Control Circle (QCC), 5S (including Seiri, Seiso, Seiton, Seiketsu and Shitsuke), clinical pathway and ISO as the methods to improve healthcare quality. Meanwhile, we also audit all adverse events monthly through quality adverse event reporting system.

3. Patient safety indicators

The goal of patients’ safety indicators and guidelines set by the Health Administration Department in 2004, is to establish the patients’ safety indicators. They are also used as a guideline for the local health system for patients’ safety, in an attempt to reduce the rate of medical errors and to give a safer environment for patients.

The selection of the indicators is first to collect local and foreign patients’ safety indicators, then a group of experts studied 67 items chosen from 399 patients’ safety indicators. Then, with the approach of the Delphi method, 48 items of the patients’ safety indicators were adapted in Taiwan.
4. Patient-centered organizational culture

To build good relationships between doctors and patients, both patient safety environments and prevention of medical errors must be focused on. Doctors must discuss and explain either to his patients or to one of the member in his/her family about the medical progress and means of the appropriate treatments. For example, before or after a surgery, the important communication content needs to be written in the medical history records, asking the patient and his family to sign a confirmation, to avoid any misunderstandings.

5. Instruction of patients’ safety to the public

There are 20 suggestions given by the Agent for Healthcare Research and Quality (AHRQ) for the guidelines for prevent patients from medical injuries.

(1) The single most important way you can help to prevent errors is to be an active member of your health care term.

(2) Make sure that all of your doctors know about everything you are taking. This includes prescription and over-the-counter medicines, and dietary supplements such as vitamins and herbs.

(3) Make sure your doctor knows about any allergies and adverse reactions you have had to medicines.

(4) When your doctor writes you a prescription, make sure you can read it.

(5) Ask for information about your medicines in terms you can understand—both when your medicines are prescribed and when you receive them.

(6) When you pick up your medicine from the pharmacy, ask: Is this the medicine that my doctor prescribed?

(7) If you have any questions about the directions on your medicine labels, ask.

(8) Ask your pharmacist for the best device to measure your liquid medicine. Also, ask questions if you are not sure how to use it.

(9) Ask for written information about the side effects your medicine could cause.

(10) If you have a choice, choose a hospital at which many patients have the procedure or surgery you need.

(11) If you are in a hospital, consider asking all health care workers who have direct contact with you whether they have washed their hands.

(12) When you are being discharged from the hospital, ask your doctor to explain the treatment plan you will use at home.

(13) If your are having surgery, make sure that you, your doctor, and your surgeon all agree and are clear on exactly what will be done.

(14) Speak up if you have questions or concerns.

(15) Make sure that someone, such as your personal doctor, is in charge of your care.

(16) Make sure that all health professionals involved in your care have important health information about you.

(17) Ask a family member or friend to be there with you and to be your advocate (Someone who can help get things done and speak up for you if you can’t.)

(18) Know that “more” is not always better.

(19) If you have a test, don’t assume that no news is good news.

(20) Learn about your condition and treatments by asking your doctors and nurse and by using other reliable sources.

6. Strengthen patients’ safety with education and training for medical personnel:

The patients’ rights include “the rights to seek medical treatments” and “the rights of humanity.” The rights to seek medical treatments generally are the basic privilege for every human being in the society. The rights of humanity are interpreted as the obligation assigned by all hospitals to let its patients informed. The most significant theme of medical care is the idea of “do no harm” to any of the patients. Learning the concepts of crisis management, providing education about quality continuously, improving the patient safety are factors to prevent any possibilities of adverse errors. With the help and participation of all the medical staff, the patient-centered organization can be eventually built.

7. Establishment of information technology

Information technology, which provides immediate reaction as any abnormality occurs, is used effectively to reduce medical errors at the rate of 30 per cent to 50 per cent. On the other hand, information technology plays a significant role in the fields of medicine and patients’ safety, Taipei Medical University-Wan-Fang Hospital, Taiwan, has had patients’ safety informatics, PSI, since 2003. The following factors are the basic components of information technology in hospital, to
help reduce medical errors and improve patients’ safety. There were four programs already implemented: drug-drug interaction (DDI), surgical patients’ safety system (SPSS), adverse event reporting system (AERS) and high risk reminder (HRR). Hopefully, the basic principle of patients’ safety can be built effectively with the applications of information technology.

8. Establishment of medication policy
To reduce medical errors and to improve patients’ safety, it is essential to examine the process of the medications prescription.

9. Enforcement of the policies for infection control
The establishment of the crisis management policy and the standard operation procedures are important factors for infection control.

   Education on the concepts of infection control for all the medical personnel should be made periodically. Education provider should concern about the level of acceptance of each personnel and choose the most effective methods and most appropriate language, to accomplish our goals through these efforts such as identification of the infection, standard principal for operating procedures and the instructions and demonstrations of the protecting appliances.

10. Strengthen the safety of the medical process and the facilities utilization
These included 3 categories:

(1) Facility utilizations: including the safety of all the following facilities such as emergency exit, stairs, bathrooms and other appliances.

(2) Medical processes: including SOP in nursing, operations, infection controls, patient identification, radiation, fire, etc.

(3) Physician’s behaviors: including professionals, technology, and operations.

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Executive Summary

With a large number of hospitals, mostly in the City of Ulaanbaatar, 17,877 public sector hospital beds and 6,448 doctors for a population of 2.5 million people, there are simply too many hospitals, excess hospital beds, and over staffing of hospital personnel. In addition to surplus capacity and staff, other shortcomings include inappropriate hospital admissions and clinical practices, poor distribution of limited technology, fragmentation of funding sources and administrative services, limited use of information, and inflexible planning and budgeting. Hospitals also serve as social care facilities for the old and infirm, particularly in winter. Adverse payment incentives encourage inefficient use of inpatient services and hospital stays are unnecessarily long, averaging 11-12 days. Public Hospital spending is approximately 75-80% of the total public healthcare expenses, and this has changed little over the last few years. It is clear that little restructuring of the hospital sector has occurred, and the main result is that the large duplication in facilities and services means that funds are not available to improve the quality of services, equipment, or medical practice.

Consolidating, merging, closing, and/or privatizing facilities and reassigning, retraining, or letting personnel go, is politically difficult and often impossible. The Ministry of Health (MOH) cannot do it alone, as it does not have control of the financial and management structures that require change, and presently there are no incentives for anyone to restructure or rationalize. Privatization of facilities is premature and not a viable option at this time. However, the present environment in Mongolia, with the existing budget constraints, a new Public Sector Management and Finance Law, a Health Sector Privatization Program, and other pressures have created the need to once again review the possibilities of implementing significant change in this difficult area. What is needed is a new multi-sector approach to the problem, one that develops a common “Vision and Strategy”, has the requisite incentives and penalties at each level of the system, and one that can also show positive “results” to the patient and to the community that the Government of Mongolia (GOM) can improve the quality of health services in the long term.

In talking with many health managers in Mongolia, the issue that “the people love their hospitals and feel they have a right to stay in hospitals” comes up in every discussion. This is true in many countries and is not unique to Mongolia. However, when one talks with patients in hospitals, the patients express more concern with the quality of the physicians, nurses, laboratories, and pharmaceuticals rather than just wanting to stay overnight in hospitals. This usually means that the concern for quality improvements far outweigh the concern for a specific facility or for wanting to stay overnight as opposed to being treated as an outpatient. It is the issue of improvement in quality that Mongolia needs to come to grips with, and not the number of inpatient beds or facilities.

The recommendations and next steps listed below are a possible alternative to the present GOM strategy of making arbitrary cuts across the board due to budget constraints (e.g., all hospitals must reduce beds by 10% and moving the expenses to the outpatient area).

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1 The Mongolian National Center for Health Development states: in 2001 there were 16 specialty hospitals and centers, 46 general and special hospitals, 21 aimag hospitals, and 343 soum hospitals. In addition there are 480 private health facilities of which 124 had beds, and 118 Family Group Practice centers.
Experience in other FSU countries has shown that it is preferable to utilize a more “rational” approach to restructuring, rather than an arbitrary approach. We know from experience, that closing beds saves very little money (unless the heat and electricity are turned off completely, and the staff is let go, which seldom happens), and in Mongolia beds reduced in the public sector “pop up” again in the private sector. With respect to restructuring and rationalization activities, it is usually “cost” that comes to mind, but the issue of “quality improvement” is far more important, and in Mongolia this is the bigger issue which needs to be focused upon. Only through a rational restructuring approach can the right amount of resources be moved into those areas of quality improvements in services, equipment, and facilities. While a rational approach is more politically difficult, it is better to muster the courage to do it now, rather than allowing the whole system to collapse on itself, which is the present direction.

There are three possible options presented, and one of the three is a “no change” option and more of the same. The second option presented is a mix of doing something if you cannot do it all, but is a sub-optimal solution and will create even more problems, but may be worth exploring. The solution proposed is not new, but the lessons learned from other FSU countries could be an effective starting point in the process for finding a final, workable solution. The key changes are as follows:

A. The need for a “Shared” Vision and Strategy with a cooperative process of working together toward solutions by all sectors;

B. A major change in the funding systems to establish a “Single Pool” of funds and an integrated “Single Purchasing” System;

C. An integrated system of Governance and Management of all health facilities in UB, in order to bring about efficiencies across the whole system and establish incentive at all levels for restructuring;

D. A flexible process toward developing a Master Plan for UB that includes a five year Capital Plan for renovations and new equipment.

I. Background and Introduction

A. Background

Mongolia has made great strides in health care reform over the last decade. Significant restructuring to more and better primary care has been implemented, large numbers of personnel have left the health sector, beds have been closed, administrative decentralization installed, and a Health Insurance Fund has been implemented. However, there is still much to be done in Mongolia, and especially in Ulaanbaatar City (UB), as previously highlighted, and included excess facilities, beds, and staff, as well as inappropriate admissions, long lengths of stay, and large expenditures in heat and electricity. Addressing these issues has become a higher priority as current fiscal difficulties have necessitated significant cuts in UB hospital budgets, making it difficult to continue sustaining the large and inefficient hospital network.

One major difficulty is that hospital restructuring, rationalization, and privatization is a difficult, complex, and often “thankless” task for all parties involved. In the present environment there are no incentives for hospital restructuring, rationalization, privatization, merger, consolidations, or closure for anyone. The Ministry of Health (MOH) cannot do it by itself, as it has little control over most of the financial and management areas to be restructured (Health Insurance Fund, UB City Budget, or UB City Health Department). Restructuring means loss of jobs, and this is very difficult in the present economic environment. Hospital facilities are deeply “loved” by their communities, and the national right to “health care services” is a cultural reality. Attempting to close a facility will bring down the wrath of the community on the head of any politician attempting to carry this out. But it is clear that a “do nothing” approach to rationalization of hospitals does not reallocate scarce resources to the areas they are most needed. Privatization of health facilities is a limited option, but can work in certain situations.

B. Definitions

Beginning with the World Health Organization (WHO and UNICEF) Alma Ata Conference in 1978, the various country health systems around the world have
been attempting to reallocate scarce resources away from expensive secondary and tertiary services to more cost effective primary care services. With the breakup of the Soviet Union in 1990, all of the former Soviet Union (FSU) countries have been in the process of health reform. Over the last twenty years a number of terms have arisen which are often used interchangeably but are very different concepts. For the purpose of clarity, the following rather simplistic definitions are utilized in the context of the Mongolian environment:

**Restructuring:** This is the process of reallocation and redistribution of a variety of health resources (personnel, equipment, facilities, pharmaceuticals, supplies, and financing) from one level (primary, secondary, tertiary) to another level as well as the process of improving existing resources, both quantity and quality, within the same sector. This term is used most frequently with regard to reallocating resources to improve primary care (forming Family Group Practices, training for Primary Care Practitioners, equipment, pharmaceuticals), but is also a key component of the process of reallocating resources (primarily finances) from hospital care to primary care.

**Rationalization:** This is usually defined as the process of “down-sizing” or “right-sizing” the secondary and tertiary sectors, usually defined as both hospitals and the narrow specialty services in polyclinics. Most commonly this has meant reduction of beds, reducing the average length of stay (ALOS), merging facilities into general hospitals or multi-profile hospitals, closing facilities, and related activities in order to reduce heat and electric costs as well as personnel.

**Privatization:** This is normally defined as the process of assigning a range of activities and services now provided in public facilities (owned by the State or local government) for public patients (and sometime private patients), to be provided by private ownership or private management. This includes “outsourcing” of services—private management contracts to operate the service (dietary, housekeeping, security, laboratory, et. al.)—as well as management of all services (the total facility), usually for a management fee or bonus arrangement. This also includes outright sale of the facility, and may or may not include the real estate or land value.

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**II. Findings and Recommendations—Issues and Challenges**

**A. Excess Beds, Facilities, and Personnel in UB**

1. **Findings**

    Ulaanbaatar, the major capital city, has an estimated 760,000 to 1.1 million people, which is about 48% of the entire country. It is estimated that 40-60% of UB’s population (440,000 to 660,000) is living in the “Ger” areas, in either temporary or permanent housing, and approximately 15-20% of these people (85,000) lack official permission to be there. The UB population grew by 25.8% between 1995 and 2001.

    The public health facilities and services in UB include 16 clinical and tertiary hospitals and centers that come under the control of the MOH, and some 46 hospitals of various types (Maternity, Pediatrics, District, Khoroo, Railway, Security, Prisons, and other Specialty facilities), and approximately 118 Family Group Practices (FGP’s), that come under the Mayor/Governor’s office and are operated by the UB Department of Health. Public Hospital spending is approximately 75-80% of the total public health care expenditure, and this has changed little over the last few years. There is also a large and growing private sector or hospitals, clinics, laboratories, and pharmacies. There have been some consolidations of facilities over the last few years (TB Hospital into the Infectious Disease Hospital, and Pediatrics Hospitals into District Hospitals), but this has been a limited effort.

    It is difficult to compare the total number of hospital facilities in UB with a city of similar size in another country. The FSU countries all have a large number of specialty facilities. However, the total number of sixty-two (62) hospitals of various types, with 16 MOH tertiary facilities and with another 46 other hospitals (under the UB Mayor and UB City DOH), this is still a very large number. In a major city in a western country with a similar population of around 1 million, there would be at the very most, a total of 15-20 hospitals, which is one third or one quarter of the present number in UB. By any comparisons the number of hospitals, hospital admissions, beds, and admissions per capita, are unfavorable. All of this means that with regard to restructuring, rationalization, and possible privatization of some facilities, there is a huge potential for savings in facilities, beds, personnel, heat, electricity, and all other expenses. While at this stage it is
impossible to estimate the potential savings, it would be conservative to estimate the savings at 10-20 Billion Tugrig, over 3-5 years. This is not a small savings and should be a motivator for the GOM to move ahead.

In light of a tight budget and economic environment over the past five years (1998-2002), one would expect significant reductions in all related hospital capacity, efficiency, and input/output indicators. This has not occurred and in fact most indicators have increased and not decreased:

- Total hospital beds increased by 3.5% in whole country (+630 beds)^2;
- Real per capita health care expenditure increased by 72%;
- Total number of physicians increased by 17%, and nurses by 6%;
- Total hospital beds in UB have decreased by only 8 %; -587 beds
- Private hospital beds in UB have increased by 500%, + 892 beds;
- Private hospital beds in the Aimags have increased by 200%, +452 beds;
- Admissions to public hospitals in UB have increased by 12 %;
- Admissions to private hospitals in UB have increased by 500%;
- The total country average length of stay (ALOS) has decreased only by 12% (from 12.3 to 10.7 days), and by only 2.2 days in the clinical tertiary facilities

It is clear is that the health sector and especially the hospital sector have grown significantly over the last few years, resulting in more not less beds, admissions, personnel and cost.

In relation to key hospital efficiency indicators used by other FSU countries and by European Union (EU) countries (a possible goal for Mongolia) the comparisons in all hospital indicators is not favorable, except for physicians per 1000 population, where Mongolia has less physicians per capita than its respective FSU neighbors. While there is a serious mal-distribution of physician services throughout the country, the quantity and increase in the number of medical personnel does not appear to be a major concern.

Experience in other FSU countries has shown that closing beds saves very little money, unless heat, energy, and personnel are reduced accordingly. This seldom happens, and a closed bed is difficult to keep closed and often pops up in the private sector. Only by closing, merging, and consolidating facilities, can expenses really be reduced or permanently eliminated.

The large duplication of hospital facilities and services (with large electric and heating bills), the large excess of beds, overstaffing of personnel, especially in UB, all means that scarce resources could be better used to meet other health care needs. The potential saving in both fixed and recurrent cost in merging, consolidating, and closing old outdated facilities is huge.

The basic GOM strategy has been a “broad brush” approach of cutting 10% of the beds and moving the expenses to outpatient services. It is the clear from the results (as highlighted above) that this broad-brush policy with respect to restructuring and rationalizing the secondary and tertiary sector has simply not worked effectively.

What is required is a flexible Master Planning Process, including new capital for renovation of facilities and new equipment, over the next 3-5 years with cross-sector cooperation and assistance in solving the existing problems. If the health and hospital system is to be restructured (shifting resources to where they are most needed instead of by historically allocations), then the incentive to bring about this type of behavior must exist, both within the MOH and at the facility level.

2. Recommendation

Develop a flexible, step-by-step Master Planning process over a three year period, that involves cross-sector cooperation, and will eventually lead to mergers, consolidations, and closures and possible sale of some outdated facilities, and will also allow a capital infusion for existing facilities including renovations and new equipment that will improve the quality and provision of health care services over the long term.

B. Shared Vision and Strategy

1. Findings

The major constraints of restructuring, rationalization, and privatization of the health sector are

\(^2\) HSDP and Directorate of Medical Services Database 1998-2002.
primarily political and not technical. Merging, consolidating, and closing facilities with the resulting savings in both fixed and recurrent costs means that personnel must be reassigned, retrained, or let go. Politically this is difficult and often impossible in the present economic environment. However, to improve overall health services this is what must be done. This means that in order to bring about the needed changes, all the various sectors affected (MOFE, SSIGO/HIF, MOH, SPC, and the local UB government) must be involved in the process of finding workable solutions and developing an effective strategy. As highlighted in the previous section, it is clear that the present GOM strategy has not been effective.

In the present environment there is little cross sector cooperation on health issues. The MOH has control of the 16 clinical and specialty centers, but the UB City Administration and UB Department of Health control the remaining facilities in the city, with the exception of some of the special hospitals. The SSIGO/HIF controls most of the funding and the local or central budget controls the remaining funds, except the out of pocket payments. Each group has it own priorities and there is no clear understanding of the need to restructure, rationalize, or privatize the health sector. The new Directorate of Medical Services (DMS) is off to a good start, but there is significant confusion between its new roles and functions, and those of the existing MOH. The staff of the MOH has been reduced and there is limited capacity within the MOH to carry out any real restructuring effort.

2. Recommendation

In order to develop an effective Master Plan, the first priority should be the development of a common and shared “Vision and Strategy” among the various sectors that must be involved in the process, including the GOM, MOH, DMS, MOFE, SSIGO/HIF, SPC, and others as needed.

C. Change to Funding Systems

1. Findings

Experience in other FSU countries has shown that the establishment of a Health Insurance Fund (HIF) is often meant to bring in additional funds into the health care sector in order to improve provision and quality of services. This has not happened, and usually the Government begins cutting back the budget at about the same amount that the new HIF infuses funds into the system. This appears to be the case in Mongolia, and the new HIF funds, as well as the HIF design, have only added to the over-funding situation of the secondary and tertiary care sectors, and the under-funding of the primary care sector. This is a major policy error.

The present HIF system greatly rewards hospitals, especially tertiary hospitals and only recently have any changes come about to improve the funding of primary care. The existing HIF system utilizes a historical basis

<table>
<thead>
<tr>
<th>Country</th>
<th>Hospital Beds per 1000 Population</th>
<th>Hospital Admissions per 100 Population</th>
<th>Average Length of Stay</th>
<th>Physicians per 1000 Population</th>
<th>Out-patient Visits per capita</th>
<th>Public Health Expenditure % GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mongolia</td>
<td>7.7</td>
<td>20.1</td>
<td>12.3</td>
<td>2.4</td>
<td>4</td>
<td>4.7</td>
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<tr>
<td>Ukraine</td>
<td>7.6</td>
<td>18.3</td>
<td>13.4</td>
<td>3.0</td>
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<td>2.9</td>
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<tr>
<td>Azerbaijan</td>
<td>7.5</td>
<td>4.7</td>
<td>14.9</td>
<td>3.8</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Georgia</td>
<td>4.6</td>
<td>4.7</td>
<td>8.3</td>
<td>4.4</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Armenia</td>
<td>5.5</td>
<td>5.6</td>
<td>10.4</td>
<td>3.0</td>
<td>2</td>
<td>4.0</td>
</tr>
<tr>
<td>Turkey</td>
<td>2.2</td>
<td>7.3</td>
<td>5.4</td>
<td>1.2</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>4.1</td>
<td>15.0</td>
<td>7.0</td>
<td>1.8</td>
<td>6</td>
<td>5.8</td>
</tr>
<tr>
<td>Norway</td>
<td>3.3</td>
<td>14.7</td>
<td>6.5</td>
<td>4.2</td>
<td>4</td>
<td>7.0</td>
</tr>
<tr>
<td>EU Average</td>
<td>4.6</td>
<td>18.75</td>
<td>8.32</td>
<td>3.7</td>
<td>6</td>
<td>6.7</td>
</tr>
<tr>
<td>NIS Average</td>
<td>6.8</td>
<td>18.6</td>
<td>13.3</td>
<td>3.8</td>
<td>5</td>
<td>2.9</td>
</tr>
</tbody>
</table>

3 European Observatory, WB/WHO, HSDP, 1998 or data available;

4 NIS is the Newly Independent States of FSU: Northern Tier includes Poland, Hungary, Russia, Ukraine, Moldova, Belarus, Georgia, Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.
of cost/input based norms and standards, to pay different rates to different levels of hospitals, resulting in preferential rates for each hospital admission to higher cost tertiary hospitals. This is “the worst of all possible worlds” with regard to hospital payment. It encourages over-utilization at tertiary facilities (they get paid more to do the easy cases), discourages cost reductions at all facilities (historical cost based payment), allows cost shifting (HIF picks up local budget costs through more HIF admissions), favors tertiary facilities (more equipment and better physicians), and reduces competition in the health sector (everyone gets paid their historical cost/budget regardless of performance). No policy could be worse for hospital restructuring and rationalization.

The lack of proper incentives at the facility level is another policy error in the existing system of budget funding and spending. The former FSU system of chapter budgeting with no flexibility between chapters, the inability to mix fixed and recurrent budget and spending, the lack of the ability to retain savings and end of year “savings carryover”, is one of the most disadvantageous policies. While the new Law on Public Sector Management and Finance is designed to change these deficiencies, at present it has had little impact at the facility level. Without incentives for savings at the facility level, no facility head will effectively reduce personnel or spending. Hospital director can reduce personnel and fixed cost but will not do it unless the right incentives are in place. Experience in other FSU countries has shown that developing incentives for savings (and resultant bonus payments to management and staff) can result in large permanent savings in both fixed and recurrent costs and the single most effective change required to restructure and rationalize the health care sector is the establishment of a “single pool” of funds and an “integrated single purchaser” function, combined with incentives for savings at the facility level. If Mongolia makes no other change, it will make great strides toward restructuring the health system and significantly reducing operating costs.

2. Recommendation

Development and Implementation of an integrated “Single Pool” of Funds with “Single Purchaser”, that allows flexibility in the collection, budgeting and spending of funds, with the requisite incentives for facility performance and penalties for performance failure. A “single pool” means one account or one fund that all funds, except out of pocket, (HIF, central, and local funds), go into, and all facilities are paid out of this fund/account based on negotiated performance objectives and outputs and not historical cost inputs.

The existing system of budgeting on a historical basis of cost/input based norms and standards will need to be changed toward objective output based indicators including more quality assurance standards, using the L&A process as well as mortality and morbidity indicators. There also needs to be a closer relationship between L&A and the HIF or the new Single Purchaser in order to develop more effective controls on referrals, inappropriate admissions, and lengths of stay. The use of Clinical Pathways and other modern clinical tools and methods will need to be developed and implemented by the Quality Improvement Work Group.

The need for a “Case Mix” Payment System, whereby different rates are paid for different procedures, and one rate is paid all institutions for the same procedure (e.g., a “hernia repair” is paid the same amount to all hospitals regardless of type or size. This not need be a complicated process, and could be major groupings of 10-25 categories, and not 300+ different rates. This would greatly discourage tertiary facilities from doing the “easy” secondary cases, as they would not be paid to cover their high tertiary costs for doing secondary procedures.

The lack of an effective “Gate Keeping” function at the FGP and primary care level, the lack of enforcement of the “Bypass Fee” are major factors that could reduce costs to the HIF. The HIF should seriously consider a incentive for reducing LOS for all procedures. The lack of financial penalties and utilization controls for inappropriate admissions, referrals, and unusually long lengths of stay in the hospitals, all need attention in the development of effective payment reform, as part of the process of development of a Master Plan for Hospital Restructuring. There should be controls on primary and secondary care referrals if hospital admissions are to be reduced.

Funds Flow Diagrams and Discussion

The present system has four payers and four pools (HIF, local budget, central budget, co-payments <5, 10, 15%> and out of pocket payments) and some facilities are paid by HIF and local budget (e.g., district hospitals),
and others are paid HIF and central budget (e.g., MOH tertiary facilities), and some get just local budget, as well as other variations. The existing pools have a historical cost basis and different restrictions on the use of the funds and some funds can only be used for fixed cost, and others for recurrent costs. This restriction in the use of funds is a significant disincentive for operating a facility efficiently, and facility heads cannot use funds where they are needed, but must use the funds for expenses, where they were allocated.

The change to a “Single Purchaser” is meant to have just one pool (not 2-4 or more pools—except for out of pocket payments), and one purchaser, where all funds collected go into one account or one fund or one pool, and regardless of where the funds were collected, the funds in the single pool are used to pay all any expenses (fixed or recurrent) in all facilities (MOH, UB City, District, etc.) based on a negotiated performance contract between the facility and the Single Purchaser. One basic principle is the separation of purchaser and provider of services. The past practices the local Government or the UB City, both purchasing services and providing services should not be permitted. You want a purchaser who is a good negotiator, has no special interest to protect, and is interested in the needs of the community and the provision of quality health services and “value for money” in paying for health services.

The key issue is the “single pool and the single purchaser,” as well as the transparency and accountability of payments. The big question is, who will be the Single Purchaser and who will control the Single Pool? There is no easy answer to this question, and it will take much discussion to determine who might be the best integrated single purchaser.

Contracts and payments should be linked to the revised HIF guidelines, and the retention of hospitals with the appropriate licensed staff and who can meet accreditation guidelines. The next step would be to develop quality outcome measures and performance incentives and penalties to encourage the good clinical practice and discourage poor health delivery performance.

The change to a single pool should allow one centralized fund or account where all payments, except out of pocket payments, go into one account, to then be used as the needs of the facility dictate, whether fixed or recurrent, heat, salaries, or bonuses.

D. Governance and Management of the Health System

1. Findings

Once again the disparities and dysfunctional consequences of the existing system of governance and management of the health care system in UB need not be elaborated here. It is sufficient to say the major split between the MOH facilities (16 clinical and tertiary facilities) and the UB City Department of Health facilities, with six (6) separate district Governors under the direction of the UB Mayor/Governor, does not allow for any serious restructuring or rationalization activities across the entire health care system (primary, secondary, and tertiary). There is little real competition among public facilities. Patients bypass cost effective primary care and lower cost secondary care and go directly to higher cost tertiary care facilities without penalty or consequences. While this may be good for the patient, it is not good for the population, nor is it good for the GOM, and results in serious misuse of critically short health care resources and unnecessarily increases the budget and demands on HIF funding each year.

There is little or no coordination between the MOH and the UB City Department of Health. There is no joint development of Strategic Plans or Operational Plans, nor Capital Equipment Plans, and each group naturally do what it thinks is best for itself. The MOH, no manner how persistent, could not restructure facilities in UB, as they do not control the larger number of facilities nor do they have control of the funding mechanisms, incentives, or penalties that need to be implemented.

The various types and levels of management, the lack of cooperation and coordination between the various administrations, and the various political factors at all of these levels means that without some type of reorganization, nothing will happen to effectively restructure the health care system of UB. The forces of “status quo” and “business as usual” are simply too great, and as previously highlighted in the introduction, there are no incentives for anyone—not the MOH, the UB Department of Health, the Governors of the six districts, nor the Mayor/Governor—to attempt to restructure, rationalize, or private any of the health facilities or services. Merging, consolidating, closing, and privatizing some facilities with the resultant changes in personnel including reassignments, retraining, and
redundancy issues is simply not possible in the present management structure in UB City.

What is needed is a new system or governance and management of the UB health system, one that allows restructuring, rationalization, and privatization incentives across the whole system. By “governance,” it is meant that a community oriented board would be the oversight function for the management group, and would ensure that restructuring and rationalization, is in line with community needs and resources.

2. Recommendation

Development and implementation of an integrated Governance and Management System for the entire UB health care network, including all facilities and services, with one community oriented board overseeing the process of reform, restructuring, rationalization and privatization.

E. Privatization of Health Facilities and Services

1. Findings

Background

A pilot health sector privatisation program was launched in 1997. Within the pilot exercise, some District Hospitals and Soum level hospitals were to be managed either by the private sector or individuals on a contract basis. The Bayanzurkh District Hospital and 47 Soum hospitals of 16 Aimags were covered by the pilot program. The aim of the program was to improve the quality and access to health services, increase efficiency and identify issues and principles that should be followed for further application of contracting out mechanisms in the health sector.

The scope of the program included the potential contracting out of some medical services, laboratories, diagnosis, cleaning, canteen services and management contracts for Soum, Aimag, District, Clinical Hospitals and Specialised Centres.

The Government’s overall policy goal was/is to accelerate the privatization process and increase private sector participation in the economy, thereby improving economic efficiency, generating economic growth and enhancing the welfare of the people. Based on the Guidelines, the Government would adopt annual action plans specifying the enterprises and assets to be privatized by the State Property Committee during the year and the methods to be utilized. For each privatisation, the Government would choose the most appropriate method and structure of sale to achieve its’ objectives.

2. Recommendations

Health sector privatization initiatives should be delayed until Government has:

• Developed a single transparent payment mechanism with appropriate incentives and penalties.
• Created a Master Plan for health facilities and services delivery/outcomes.
• Developed transparent and robust policies, documents and tender procedures for privatisation initiatives.
• Developed meaningful performance indicators.
• Recruited and trained additional appropriate staff for MOH and DMS.
• Developed contract management capabilities.
• Developed market interest – preferably international to improve the quality of service outcomes.
• Achieved the political will and commitment, including financial support for redundancies and facilities closure necessary to implement meaningful reforms.
• Developed a mature dynamic licensing and accreditation system, to be applied systematically, transparently and without discrimination

III. Options for UB Master Planning

A. Option #1: More of the Same Strategy

The most obvious option is that the GOM will continue along same process with a broad-brushed strategy to demand specific cuts in hospital length of stays combined with further movement of expenses to the outpatient areas. This will not result in significant cost reductions as this can only come from consolidating and closing facilities, turning off the heat and electricity, and reassigning personnel, which seldom happens without the needed financial incentives at the facility level and at the larger system level. The easy bed closures, expense reductions, personnel retirements, and length of stay changes have already been done, and the probability of large decreases without systems changes is highly unlikely. It is not possible to estimate to any degree of accuracy the financial implications of this
option, but probability of any significant savings is small or negligible over 3-5 years.

B. Option #2: Improvements in Utilization Review and Some Reorganization

If it is not possible to bring about a shared vision and strategy of restructuring, rationalization, and privatization, then there are a number of possible options to consider instead of just more of the same, as outlined below.

Option #2 is a midway option or a sub-optimal option that has a number of variations. One possible effective tool is improved utilization review activities. These controls could reduce utilization of services through the implementation of both incentives and penalties on inappropriate admissions, length of stay, referrals, and discharges, with improved licensing and accreditation criteria and standards. If the HIF developed incentive to reduce length of stay, an improved case-mix system, a gate-keeping function at the primary care level, with improved controls and an enforced “bypass fee,” then utilization could be reduced significantly. Combining these utilization review changes with a more effective Licensing and Accreditation process, could reduce admission rates, and eventually reduce costs. However, this means changing physician behavior through new standards and training, and the use of new penalties and incentives. If successful, this might reduce utilization but without closing facilities, merging, consolidating, turning off the heat, closing down the building, and letting the staff go, there will be little significant savings.

Another option organizationally would be to divide the city up into 2-3 districts instead of 6 districts for health services management and governance purposes (including putting all MOH and UB City facilities within that district). This would provide the ability to merge, consolidate, or close facilities across a smaller number of districts (2-3 instead of 6 plus the MOH facilities) and would give added flexibility in restructuring as you could restructure both MOH and UB City facilities within the district. This is not possible at present as the MOH facilities are organizationally separate from the UB City facilities.

A possible variation of this option is the possibility of allowing the UB City to operate the primary care facilities, and the MOH to operate all the secondary and tertiary facilities. This is also a sub-optimal option, as it would not allow management to restructure toward more and better primary care, which is badly needed, and would not allow the incentives to reduce hospital expenses and to reallocate to primary care, preventative, and environmental activities. It is difficult to estimate the financial implications of these changes, as there are so many variables involved, but there could be significant savings if restructuring was applied across 2-3 districts and not 6 districts. There would be more savings than in Option #1, but it is impossible to estimate at this time.

C. Option #3: Regional/Territorial Management of UB

The optimal option, with regard to effective planning and control activities in the interest of restructuring, rationalizing, and privatizing across the whole health care sector, is to integrate all management (MOH facilities and UB City facilities) into one regional structure, under one management and with a Regional Governance Board of Directors to oversee management and patient rights throughout the whole city. This has numerous efficiency advantages and has been recommended by many authorities over a number of years—see Appendix. This option, if politically feasible, has the largest probability of success with regard to restructuring, rationalization, and privatization of some sectors of the health care system. Again, it is difficult to estimate the potential savings, but with effective management, it could be in the range of 10-20 Billion Mongolian Tugrig over 3-5 years.
Meeting Increased Demand

Andrew BLAIR*

President of the New Zealand Private Hospitals Association

“*The heavy rain clouds are clearly visible on the horizon and we know we don’t have enough umbrellas*”.

Summary

New Zealand is a little country with a little economy but with a population that’s rapidly aging. New Zealand’s population is only 4.3 million people. It’s GDP is only $US58.6 billion (2002).

New Zealand’s expenditure on health as a percentage of GDP is not out of line with that of other countries. As a nation we have been increasing expenditure on health over recent years. In 1990 we spent 7% of GDP on health. In 1995 that increased to 7.65% and is now 8.3%. However, in per capita terms our expenditure on health does not compare so well with like countries. The size of New Zealand’s economy is restricting what our country spends on health. Health is already the second highest demand on the New Zealand tax dollar. The tolerance of New Zealanders would be challenged if a Government attempted to increase taxes further to meet the growing demands for expenditure on health, but at the same time the population’s expectations are increasing. This is the challenging situation we face today. What lies ahead?

Like all industrialized countries New Zealand is facing an aging population. The population below age 40 is decreasing, but it is increasing significantly over that age. 16% of the population is currently aged over 60. By 2051 this proportion will almost double to just over 31%. Coupled with the aging population is increased awareness and expectations, as access to options for treatment and technology becomes readily accessible to the population through such media as the internet.

The extent of the impact of the aging population can be clearly represented by focusing on one specialty such as orthopaedics. The New Zealand Orthopaedic Association undertook a study in July 2003 which concluded (among other things) that as a result of the projected aging of the population, over the next 50 years:

• Musculo-skeletal operations will increase by over 30%.
• The number of hip replacements will nearly double.
• The incidence of osteoporosis will increase by a massive 201%.
• The number of people affected by arthritis will increase by nearly 50%.
• A huge increase in numbers affected with musculo-skeletal conditions will require significant increases in health care resources, including hospital beds and facilities, orthopaedic surgeons and other health care professionals.

New Zealand has been slow to acknowledge and plan for the increased demand for health services which is looming. Growing New Zealand’s economy will help, but alone will not be enough. It is more than just finding the financial resources to better meet the demand. The enormous demands on the availability of treatment resources including hospital facilities and trained health care professionals must be addressed. There are major workforce issues to be faced. The change in population distribution between young and old will have an impact and it will be necessary to ensure that there are sufficient numbers of properly trained health care professionals

* About the Author:  Andrew Blair is President of the New Zealand Private Hospitals Association and Chief Executive of Royston Hospital, a private surgical hospital in Hastings, New Zealand. He can be contacted at andrewb@royston.co.nz.
available at all levels.

It is hoped that improvements in preventative care programmes and new technologies and treatment techniques may reduce the rate of demand. As the health of our population is improved through targeted programmes dealing with obesity, diabetes, smoking and accident prevention, it may be possible to reallocate or change the focus of resources within the health and hospital sectors. Many countries are developing national strategies for their aging population. Clearly the New Zealand Government needs to move swiftly to develop a plan to manage the increased burden that is developing as a result of the aging population. That plan must create an environment which facilitates, encourages and supports greater private investment in healthcare facilities and healthcare delivery. Incentives must be created to motivate individuals to take greater responsibility for their healthcare needs and the funding of it. The development of a long term strategy to meet the challenges of the aging population is a priority.

A full copy of the paper is available by contacting the author at andrewb@royston.co.nz.

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**Our Dilemma?**

New Zealand is a little country with a little economy, but with a population that is rapidly ageing. This presents a major challenge to health care planners.

**Facts and Comparisons**

Some facts and comparisons which demonstrate how little New Zealand is are shown in the table below.

These figures are more dramatically represented by the following graphs:

**Expenditure on Health**

New Zealand’s expenditure on health as a percentage of GDP is not out of line with that of other like countries. As a nation we have been increasing expenditure on health over recent years. In 1990 we spent 7% of GDP on health. In 1995 that increased to 7.65% and we are currently spending 8.3% of GDP on health. The following graph demonstrates how this compares to other countries.

<table>
<thead>
<tr>
<th>Comparison with Other Countries</th>
<th>New Zealand</th>
<th>Australia</th>
<th>USA</th>
<th>Japan</th>
<th>UK</th>
<th>Republic of Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (estimated millions)</td>
<td>4.03</td>
<td>19.7</td>
<td>294.1</td>
<td>127.7</td>
<td>59.3</td>
<td>47.7</td>
</tr>
<tr>
<td>GDP (Annual $US Billion 2002)</td>
<td>58.6</td>
<td>399.1</td>
<td>10,445.6</td>
<td>3,987.6</td>
<td>1,566.3</td>
<td>476.7</td>
</tr>
</tbody>
</table>
However the per capita expenditure on Health does not compare so well.

Population Projections
Like all industrialised countries, New Zealand is facing an ageing population. Increasing longevity, higher birth rates following World War II and the more recent decline in fertility rates will contribute to a more pronounced shift in the age distribution towards older groups during the next four to five decades. The population below age 40 is decreasing, but over that age it is increasing significantly. 16% of the population is currently aged over 60. By 2051 this proportion will almost double to just over 31%.

In terms of numbers, what the percentages in the table above demonstrate are that the population aged over 60 will rise from 521,000 in 2001 to 905,000 in 2015 and to 1,518,000 in 2051. That is an overall increase of 2,441 in the population aged over 60. Coupled with the ageing population is increased awareness and expectations, as access to options for treatment and technology becomes readily accessible to the population, through such media as the Internet.

The Specific Impact on Musculo-skeletal Disease
The extent of the impact of the ageing population can be clearly demonstrated by focusing on one specialty, such as orthopaedics.

The New Zealand Orthopaedic Association undertook a study in July 2003 which concluded that as a result of the projected ageing of the population during the next 50 years:

- Musculo-skeletal operations will increase by over 30%.
- The number of hip replacements will nearly double from the current number of 4,911 (2001) to a projected 9,718 (2051).
- The incidence of osteoporosis will increase by a massive 201%.
- The number of people affected by arthritis will increase by nearly 50%.
- The huge increases in numbers affected with musculo-skeletal conditions will require significant increases in health care resources, including hospital beds and facilities, orthopaedic surgeons and other health care professionals.

How do we deal with these challenges?
New Zealand has been slow to acknowledge and plan for the increased demand for health services which is
looming. Some economists would say there is simply no answer. Try telling that to New Zealanders currently aged 40-50 who will be the victims if serious planning is not undertaken immediately. Growing New Zealand’s economy will help, but that alone will not be enough. As the generation of New Zealanders born between 1946-1964 (the so called baby boom generation) has aged, New Zealand has had to embark on massive housing construction projects, build schools and train teachers, followed by increased investment in universities and tertiary education. It has generally tackled those challenges presented by the baby boom generation well. What it must now do is address the health needs of that generation as they age and as demands and expectations grow. It is not only the challenge of health expenditure and health needs, but superannuation, aged care housing and other related needs of the elderly.

It is more than just finding the financial resources to better meet demand. The enormous demands on the availability of treatment resources including hospital facilities and trained health care professionals must be addressed. There are major workforce issues to be faced. The changing population distribution between young and old will have an impact and it will be necessary to ensure that there are sufficient numbers of properly trained health care professionals available at all levels.

Much of the provision of facilities will need to come from private providers. However, private investment in the delivery of healthcare will only occur in a meaningful way if the Government provides the right environment to attract it. Private providers will require more certainty than they are offered today, and Governments will need to more actively acknowledge the important contribution of the private sector. Opposition to the notion of making a profit from providing healthcare facilities and delivering healthcare services is an impediment to greater private involvement and must cease.

Individuals will also need to take greater responsibility for their own healthcare needs. At present only 32% of New Zealanders have any degree of health insurance. There is no legislative compulsion to insure, and there is little incentive to do so while Governments continue to create the perception that all healthcare needs can and will be met from taxation. The public deserves honesty and needs to be made aware of the importance of individually taking a greater responsibility for their healthcare needs and the funding of it. Incentives need to be provided.

It is hoped that improvements in preventative care programmes and new technologies and treatment techniques may reduce the rate of demand. As the health of our population is improved through targeted programmes dealing with obesity, diabetes, smoking and accident prevention, it may be possible to reallocate or change the focus of resources within the health and hospital sectors. Many countries are developing national strategies for their ageing populations. Clearly the New Zealand Government needs to move swiftly to develop a plan to manage the increased burden that is developing as result of the ageing population. The development of a long term strategy to meet the challenge of the ageing population is a priority. We need to make sure we have the umbrellas we will need when the rains arrive.

Acknowledgements

Statistic’s New Zealand, World Health Organisation website, New Zealand Orthopaedic Association.
Post SARS — A New Norm in Hospital Services in Hong Kong

Lawrence LAI
Immediate Past President of Asian Hospital Federation

**Introduction**

The Hospital Authority (HA) is established by statute in December 1990 to oversee the management responsibility of all public hospitals in Hong Kong. The HA is principally funded by the Hong Kong government. It is responsible for delivering a heavily subsidized comprehensive range of preventive, curative and rehabilitative medical services to the people of Hong Kong through its network of health care facilities, which include 43 public hospitals/institutions with over 29,000 beds, 46 Specialist Outpatient Clinics.

As with other member countries in the region, Hong Kong has experienced economic downturn in recent years. As a result, HA continued to face external challenges of significant budgetary constraints, rising health care demand from a growing and aging population, new innovations, in medical technology and organization reforms to achieve efficiency and productivity gains through service rationalization, prioritization, re-engineering and other cost containment measures.

Apart from these daunting challenges, the public hospital system in Hong Kong has faced the unprecedented challenge of the Severe Acute Respiratory Syndrome (SARS) outbreak last year, the enormity of its impact is such that it has prompt all healthcare systems around the world to rethink improvement measures that can prevent, minimize and contain the threat of major infectious disease outbreak in the hospital or community. After SARS, the practice of medicine in a hospital setting, particularly in infection control, will never be the same as before. Learning from the SARS experience, the aim of this presentation is to share the Hong Kong’s approach on how to provide a new “norm” of hospital service in the Post-SARS era. Before doing so, I wish to present a brief introduction on Hong Kong, its healthcare services and recent health care reforms to acquaint delegates with a proper perspective on the health care system and challenges in Hong Kong.

**Overview on Hong Kong and its Healthcare Services**

Hong Kong is one of the most densely populated place in the world with a land area of 1,100 sq. kilometer and an estimated population of 6.8 million (2001). It has a doctor to population ratio of 1.6 per 1,000 and a hospital bed to population ratio of 5.2 per 1,000. The long established health care policy in Hong Kong is that “No One should be deprived of adequate medical care because of lack of means”. Over the years, the Hong Kong healthcare system has evolved into a highly compartmentalized one with a significant public sector funded by general taxation providing highly subsidized services to its residents and a private sector where payment for service is mostly out of pocket or by private and employer-provided medical insurance.

All the public hospitals in Hong Kong are managed by the Hong Kong Hospital Authority (HA) which was established by the Hospital Authority Ordinance in 1990. The HA is currently responsible for 43 hospitals & institutions with 29,000 beds, 46 specialist outpatient clinics, 74 General Outpatient Clinics and over 50,000 staff. It is operating under an annual recurrent budget of US$3.83 billion, providing highly subsidized service to 1.2 million inpatients, 2.5 million Accident and Emergency visits and 8.4 million specialist outpatient attendances annually. Compared with other advanced economies, Hong Kong health care expenditure as a proportion of GDP is relatively low (Figure 1), yet its health indices are amongst the best in the world (Figure 2).
Recent Health Care Reforms

Similar to other countries in Asia Pacific region, Hong Kong has faced the following challenges and issues in recent years:

- Rapid advances in medical science and technology and the ability to prolong life
- Rising service demand
- Increasing community expectations
- Population growth, aging population and increasing prevalence of chronic illness and disability
- Highly variable health care quality
- Questionable long-term financial sustainability of current health care system

As shown in Figure 3, a significant proportion of the funding source for healthcare in Hong Kong is from general taxation.

With rising demand and growing community expectations for high quality care in the public sector, it is envisaged that the current health care financing model will not be sustainable for Hong Kong in the long term.

The government has accordingly proposed health care reforms in 2001/02 which, while upholding government’s guiding principles to ensure that every resident should have access to reasonable quality and affordable healthcare, aims at assuring long-term sustainability through a system of shared responsibility between the government and residents where those who can afford to pay for health care should pay.

The proposed health care reforms in Hong Kong can be summarized in Figure 4 and 5.

SARS and Post-SARS: New Norm of Hospital Services

With the brief background introduction about Hong Kong, I now turn to SARS and its aftermath on the delivery of health services in Hong Kong.

The outbreak of SARS in Hong Kong started in February 2003. Over a period of about 3 months, SARS afflicted 1,755 patients, of whom over 300 are health care workers. The chronology of events of SARS, its spread from the index case and the SARS epidemic curve are shown in Figures 6, 7 and 8.
One of the alarming features of SARS is that it can be readily transmitted in the health care setting to affect health care workers. With the experience gained from the SARS outbreak, breakthrough infections among health care workers can be caused by the following factors:

- Inadequate knowledge, awareness in early phase
- Use of aerosol generating devices e.g. nebuliser
- Sudden increase in SARS cases
- Improper Use or Manipulation of Mask, PPE
- High Risk Procedure e.g. Intubations, CPR
- Social Contact
- Nursing care demanding patients
- Atypical presentations

To counter breakthrough infection, the infection control measures adopted in Hong Kong are shown in Figures 9, 10 and 11.

Now that we are one year after SARS, there are still many lessons to be learned. Hong Kong has recently benefited by the advice of the Western Pacific Regional Office, WHO on its lesson learned which are summarized in Figures 12 and 13.

Within the Hong Kong Hospital Authority, due emphasis has been placed on inter-departmental and inter-sector connectivity as well as knowledge management and applied research in order to ensure competence and capability in the proper diagnosis and management; control and prevention; surveillance and management of surge capacity and crisis in response to a major infectious disease outbreak. Under the guiding strategies of the Hospital Authority, public hospitals in Hong Kong have adopted “new norms” in hospital service with the following key changes:

(I) Enhance facilities & logistics for future outbreak of infectious disease

To ensure proper isolation and management of patients with infectious disease, works on conversion and commissioning of isolation wards / facilities have been completed.

(II) Enhance capability in crisis management

Each hospital has set up a command centre for crisis response. Drills have been conducted to evaluate...
robustness of contingency plan and enhance staff preparedness. A communication network with private health care providers has also been set up to enhance collaboration in patient care in the event of major infectious disease outbreak.

(III) Improve Infection Control

Infection control measures have been stepped up in HA hospitals to safeguard staff and patient’s health. Detailed training plans have been formulated to enhance staff competence and capability in managing major infectious disease outbreaks. Comprehensive training programmes on infection control, intensive care and crisis communication have also been organized for different levels of staff. In addition, HA hospitals have adopted the following infection control precautions/measures:

1. Infectious Disease Surveillance
   Infectious disease risk stratification guidelines would be regularly hours per day with not more than 2 visitors at any one time. All visitors are required to complete visitor registration and health declaration and be given appropriate personal protective equipment to area of visit.

2. Maintain vigilance on unusual clustering of unexplained infections
   All community acquired pneumonia among elderly homes residents would be closely monitored. Staff with febrile illness would be reported under the Staff Early Sickness Alert System (SESAS), an electronic sickness reporting system, and all suspected avian influenza H5 cases would be notified to the Health Authority.

3. Visiting Hours
   To ensure proper infection control, no visitor would be allowed in the isolation wards. Visiting hours would be restricted to not more than 4 hours per day with not more than 2 visitors at any one time. All visitors are required to complete visitor registration and health declaration and be given appropriate personal protective equipment to area of visit.

---

**Figure 9**

**Infection Control in High Risk Areas**

<table>
<thead>
<tr>
<th>Requirements</th>
<th>No direct contact</th>
<th>Direct Contact</th>
<th>Aerosol Generating procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand washing</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Gloves</td>
<td>-</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Gowns</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Cap</td>
<td>+/-</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>N95</td>
<td>M</td>
<td>M</td>
<td>M + ve</td>
</tr>
<tr>
<td>Goggles</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Full Face shield</td>
<td>+/-</td>
<td>M</td>
<td>M</td>
</tr>
</tbody>
</table>

M: Mandatory

---

**Figure 10**

**Key Infection Control Measures:**

- Hand Washing
  - frequent
  - consistent
  - after gloves removal
  - antiseptics if indicated

---

**Figure 11**

**Ventilation Improvement**

- Airflow checking
- Extractor Fans
- Barriers

---

**Figure 12**

**WHO: Lessons learned from SARS**

- Timely and transparent information sharing
- National sovereignty and protection of global public health
- Economic impact
- Lack of surge capacity at country and regional level
- Poor public health infrastructure
- Inadequate infection control practices in health care settings
- Multi-sectoral coordination
- Risk communication

By Dr Hitoshi OSHITANI
WPRO/WHO 23/6/2004
4) Use of Personal Protective Equipment (PPE)

The use of appropriate PPE would be based on the following infection transmission risks:

- High risk areas/isolation wards – Full PPE
- Other patient area – surgical masks for all staff and patients with respiratory symptoms
- Non-patient area – no PPE required

5) Other Infection Control Measures

Depending on the different locations and nature of the patient care service area, the following infection control measures have also been adopted:

**Accident and Emergency Department**
- Conduct temperature check for all patients
- Segregate patients with suspicion of highly contagious diseases
- Provide full PPE for staff (surgical/N95, full face/eye shield, gown) for high risk procedures (e.g. resuscitation) and in high risk areas

**Outpatient Clinics and Day Centres**
- Triage and conduct temperature check for patients with fever and respiratory symptoms
- Provide full PPE (surgical/N95, full face/eye shield, gown) for staff in triage / high risk areas

6) Laboratory surveillance

For prompt detection of potential reemergence of SARS or other major infectious disease outbreaks, all patients with CAP of unknown aetiology who failed to respond to antibiotic(s) would have to undergo SARS-CoV PCR testing. Rapid test for influenza and other viruses or pathogens would be conducted for hospitalized patients with severe influenza-like illness and/or with history of travel to areas with avian influenza outbreak among poultry

**Conclusion**

By adopting the following approach:

**Be Vigilant**

**Be Informed**

**Be Prepared**

it is hoped that all health care workers will be well prepared to prevent or manage all infectious disease outbreaks in Hong Kong.

---

**WHO : One Year after SARS outbreak**

**Remaining issues**
- Ecology of SARS-CoV in environment (natural reservoir)
- Vaccine and antiviral development
- Diagnostic kits

**New Issues**
- Laboratory safety and containment
  - Laboratory acquired cases in Singapore, Taiwan, Beijing

Dr Hitoshi OSHITANI
WPRO/WHO 23/6/2004
Consumer Access to Healthcare Information in Japan: Relationship to Healthcare Advertising

Toshiki MANO, Kazunobu YAMAUCHI, Hiromasa IDA and Makoto KOBAYASHI

Introduction

In recent years, various opinions on healthcare reform in Japan have been voiced from the perspectives of such players as the Economic Affairs Advisory Council, Department of the Treasury, Ministry of Health, Labour and Welfare, Japanese Medical Association, and National Federation of Health Insurance Societies. However, no definite direction has been established to date. There are few people who can provide diverse and appropriate healthcare information to the consumer patient. The Ministry of Health, Labour and Welfare attaches great importance to providing healthcare information. The healthcare service efficiency program of the Economic Affairs Advisory Council provides public information on healthcare and healthcare facilities by distributing information to the public through a healthcare information database and network. There is a raging controversy concerning patient chart disclosures and receipt disclosures from healthcare facilities.

In Japan, healthcare facility advertising has long been prohibited. Items relating to healthcare facilities which can be advertised are determined in Article 69 of the Healthcare Law. However, Article 9 of the 2001 Bulletin of the Ministry of Health, Labour and Welfare increased the number of items which can be advertised, and advertising restrictions for healthcare facilities have relaxed from April 2002 according to the above policy direction.

Based on these conditions, the current report pertains to a questionnaire survey on healthcare information taken by healthy consumers.

Methods

- Survey area: 30 km range from central Tokyo
- Survey subjects: Men and women between the ages of 15 to 65 from the general population
- Extraction method: Stratified bi-level extraction by resident registry
- Survey method: Questionnaires left for residents by survey staff during home visits
- Subjects: 1,665
- Collected: 757
- Collection rate: 45.7%
- Analysis subjects: 720
- Questionnaire content: Subjects who had negative experiences precipitated by inadequate healthcare information (i.e., information relating to medications, healthcare facilities, physicians) were asked to select a maximum of three healthcare information sources deemed to be reliable and items they consider the most important. Each subject selected a maximum of three desirable healthcare information providers,
a maximum of three desirable methods for obtaining healthcare information from now on, and items they consider the most important. The relationship to methods of obtaining information was also investigated.

Results

1. Negative experience precipitated by inadequate healthcare information (i.e., information relating to medicines, medical facilities, physicians)

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Frequent</td>
<td>89</td>
<td>12.4%</td>
</tr>
<tr>
<td>Frequent</td>
<td>126</td>
<td>17.5%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>237</td>
<td>33.0%</td>
</tr>
<tr>
<td>Seldom</td>
<td>216</td>
<td>30.0%</td>
</tr>
<tr>
<td>Never</td>
<td>48</td>
<td>6.7%</td>
</tr>
</tbody>
</table>

More than 50% responded they “sometimes” had negative experiences precipitated by inadequate healthcare information.

2. Healthcare information sources

<table>
<thead>
<tr>
<th>Table 2: Reliable healthcare information sources</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare Facility</td>
<td>338</td>
<td>18.5%</td>
</tr>
<tr>
<td>Friend</td>
<td>315</td>
<td>17.2%</td>
</tr>
<tr>
<td>Family</td>
<td>261</td>
<td>14.3%</td>
</tr>
<tr>
<td>Medical Society</td>
<td>56</td>
<td>3.1%</td>
</tr>
<tr>
<td>Individual Physician</td>
<td>142</td>
<td>7.8%</td>
</tr>
<tr>
<td>Individual Pharmacist</td>
<td>20</td>
<td>1.1%</td>
</tr>
<tr>
<td>Ministry of Health, Labour and Welfare</td>
<td>178</td>
<td>9.7%</td>
</tr>
<tr>
<td>Health Center</td>
<td>178</td>
<td>9.7%</td>
</tr>
<tr>
<td>Pharmaceutical Company</td>
<td>13</td>
<td>0.7%</td>
</tr>
<tr>
<td>Independent Evaluation Organization</td>
<td>326</td>
<td>17.8%</td>
</tr>
</tbody>
</table>

Reliable healthcare information sources were sequentially ranked as healthcare facilities (18.5%), independent evaluation organizations (17.8%), friends (17.2%), family (14.3%), the Ministry of Health, Labour and Welfare, and health centers. However, the question relating to the most reliable information sources produced independent evaluation organizations (29.0%) as the leader, followed by healthcare facilities (18.7%), and physicians (10.2%).

<table>
<thead>
<tr>
<th>Table 4: Desirable healthcare information providers</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare Facility</td>
<td>490</td>
<td>27.8%</td>
</tr>
<tr>
<td>Medical Society</td>
<td>171</td>
<td>9.7%</td>
</tr>
<tr>
<td>Individual Physician</td>
<td>84</td>
<td>4.8%</td>
</tr>
<tr>
<td>Individual Pharmacist</td>
<td>12</td>
<td>0.7%</td>
</tr>
<tr>
<td>Private Organization</td>
<td>231</td>
<td>13.1%</td>
</tr>
<tr>
<td>Ministry of Health, Labour and Welfare</td>
<td>341</td>
<td>19.3%</td>
</tr>
<tr>
<td>Health Center</td>
<td>286</td>
<td>16.2%</td>
</tr>
<tr>
<td>University Medical School</td>
<td>20</td>
<td>1.1%</td>
</tr>
<tr>
<td>Pharmaceutical Company</td>
<td>44</td>
<td>2.5%</td>
</tr>
<tr>
<td>Other</td>
<td>85</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

Among the selections for desirable information providers, the term “private organization” was used instead of “independent evaluation organization.” Since friend and family were omitted, the Ministry of Health, Labour and Welfare ranked second place.
3. Methods of obtaining healthcare information

Table 5: Desirable methods for obtaining healthcare information from now on

<table>
<thead>
<tr>
<th>Method</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television</td>
<td>255</td>
<td>13.6%</td>
</tr>
<tr>
<td>Internet</td>
<td>287</td>
<td>15.3%</td>
</tr>
<tr>
<td>e-mail</td>
<td>40</td>
<td>2.1%</td>
</tr>
<tr>
<td>Newspaper</td>
<td>239</td>
<td>12.7%</td>
</tr>
<tr>
<td>Magazine</td>
<td>141</td>
<td>7.5%</td>
</tr>
<tr>
<td>Weekly Magazine</td>
<td>28</td>
<td>1.5%</td>
</tr>
<tr>
<td>Radio</td>
<td>23</td>
<td>1.2%</td>
</tr>
<tr>
<td>Healthcare Facility Materials</td>
<td>472</td>
<td>25.1%</td>
</tr>
<tr>
<td>Friend</td>
<td>255</td>
<td>13.6%</td>
</tr>
<tr>
<td>Other</td>
<td>138</td>
<td>7.3%</td>
</tr>
<tr>
<td>Total</td>
<td>1878</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 6: The most important and desirable methods for obtaining healthcare information

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television</td>
<td>10.3%</td>
</tr>
<tr>
<td>Internet</td>
<td>21.6%</td>
</tr>
<tr>
<td>e-mail</td>
<td>0.8%</td>
</tr>
<tr>
<td>Newspaper</td>
<td>7.4%</td>
</tr>
<tr>
<td>Magazine</td>
<td>1.9%</td>
</tr>
<tr>
<td>Weekly Magazine</td>
<td>0.1%</td>
</tr>
<tr>
<td>Radio</td>
<td>0.1%</td>
</tr>
<tr>
<td>Materials from Healthcare Facility</td>
<td>38.9%</td>
</tr>
<tr>
<td>Friend</td>
<td>9.2%</td>
</tr>
<tr>
<td>Other</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

“Desirable methods for obtaining healthcare information from now on” produced a 25.1% response.
rate for “materials from healthcare facilities,” and “Most desirable methods for obtaining healthcare information” produced an overwhelming response rate of 38.9% for the same item.

4. Relationship to methods for obtaining information
The relationship to advertising were also investigated. Significant differences in the results were observed, but correlations were low. When CHAID analysis was performed, a relationship was noted between “points of view of advertising and information” and “dissatisfaction with inadequate healthcare information,” as shown in Fig. 1.

Discussion
There are few surveys investigating the types of information required by consumers (healthy) and patients in Japan. In a survey of 1,404 men and 1,721 women in 24 hospitals, Tango et al. investigated interests in information related to disease and health, what type of information there was interest in, if any, and how to obtain such information.

Many of the subjects (43%) surveyed were 65 years old or older, and differences in perception of information between patients and physicians relating to disease, medical treatments, and oral medications were revealed in a study conducted by the Institute for Health Economics and Policy involving 1,958 patients admitted to nine hospitals in the Kansai region. Physicians replied that they had presented their patients with information, whereas patients were dissatisfied with the information they received. In this survey, there was no difference in information relating to oral medications, and information related to surgery and large studies, but there were large differences in perception regarding injections, intravenous drips, and hospital admittance costs. Henceforth, consideration must be given to providing patients with information concerning not only medications, but also injections and examinations.

In the present study, over 50% of subjects had negative experiences precipitated by inadequate healthcare information, including those who responded “sometimes.” However, the subjects of this study were healthy, and were thought to have illnesses such as the common cold, but there were unexpectedly few who had a negative experience without healthcare information.

Regarding reliable information sources, the desire for independent organizations was unexpectedly high. This finding may express consumers’ desire for an objective evaluation. Although the Japan Council for Quality Health Care has been conducting healthcare evaluations in Japan since 1995, less than 600 hospitals have received approval, i.e., less than 1% of all hospitals in Japan.

Desirable healthcare information providers were overwhelmingly healthcare facilities, and there was strong expectation of advertising and publicity activities on the part of healthcare facilities. As previously mentioned, there has been a gradual and progressive relaxation of advertising restrictions on healthcare facilities in Japan. However, advertising causes concern about unnecessary demand for healthcare. Appropriate relaxing of advertising restrictions is desirable.

Acknowledgment
This study received research assistance from the Yoshida Hideo Memorial Foundation.

References
1. T. Tango et al. conducted a study in March 2000, to establish a new information provision function through the EBM in the fields of public health, healthcare, and welfare in the 21st century.
2. The Institute for Health Economics and Policy conducted an examination and treatment information needs survey among the elderly in March 1998.

1 Publicity as in government publicity, and widespread, non-specific advertisements for the purpose of eliciting some type of purchasing activity.
Behavior Modalities of Medical Service Consumers by Disease: Viewpoint of Medical Facilities and Perceptions of Consumers

Toshiki MANO, Makoto KOBAYASHI, Satoshi MIZUNO, and Kazunobu YAMAUCHI

Abstract

This study suggests the possibility that a patient with a mild ailment, such as a common cold, who is examined and diagnosed with diabetes at a clinic, may in the future be examined at a hospital even though treatment may be performed at a clinic. Furthermore, it may be possible to bring the consumer’s selection of a medical facility closer to being the same as the hospital’s selection by providing the consumer with treatment information. Regarding the role of the family physician in making broad diagnoses, there may be a need to educate not just the consumer, but also hospital administrators in Japan.

Introduction

One of the characteristics of the medical care system in Japan is that it is designed so that the primary care physician does not act as a gatekeeper in screening patients. Each patient is free to choose among clinics and hospitals for an initial examination in a free access system. However, the concentration of patients in university hospitals in Japan poses a problem from the perspective of resource distribution (Fig. 1). The number of hospital outpatients has increased compared to clinic outpatients, and among all hospitals throughout Japan, university hospitals alone consumed 6.8% of medical care expenses in 2000.

In order to clarify the behavioral characteristics of consumers through this study, we adopted the premise that specialization, size of the medical facility, and on-site medical equipment were desired characteristics of large hospitals. We developed the following four hypotheses and tested their validity through an experiential survey.

Hypothesis 1: Consumers place great importance on specialization, size of medical facility, and on-site medical equipment even for mild ailments such as the common cold.

A patient who places great importance on waiting time will select a clinic with a relatively short waiting time even for mild ailments, rather than considering specialization, size of medical facility, and on-site medical equipment.
Hypothesis 2: When a consumer suspects diabetes, great importance is placed on specialization, size of medical facility, and on-site medical equipment even when there is a possibility of another disease and screening is required.

The primary emphasis is placed on specialization, size of medical facility, and on-site medical equipment, and a large hospital is selected, although screening by the family physician is important.

Hypothesis 3: When the consumer is able to determine that his own condition is urgent, importance is placed on specialization, size of medical facility, on-site medical equipment, as well as waiting time.

When an emergency condition is suspected and considered serious, the patient will choose to be examined at a large medical facility. This indicates that specialization, size of medical facility, and on-site medical equipment are important considerations. Furthermore, waiting time is also an important element since the patient needs emergency treatment.

Hypothesis 4: When the same questions are put to hospital administrators, there is little difference in the basic criteria according to which the consumer distinguishes between mild ailments and ailments requiring urgent care.

This hypothesis does not mean that the consumer’s selection of a medical facility is based on a clear distinction between a mild and urgent ailment. The purpose is to compare the responses of patients, administrators, and managers of medical facilities to hypothetical questions.

**Method**

Subjects were asked their basis for selecting a medical facility in the case of illness classified into four categories: mild ailments such as the common cold, suspected diabetes, ailments requiring relative urgency such as diagnosed diabetes, and ailments requiring extreme urgency such as hematemesis. The consumer subjects of the survey were normal men and women between the ages of 15 to 65 living within a radius of 30 km of central Tokyo, selected with the cooperation of the Yoshida Hideo Memorial Foundation. The extraction method was by survey questionnaire, which was available to a visiting survey staff, and comprised of a two-tiered extraction from the public resident registry. A total of 1,665 subjects participated in the survey from June 28 to July 11, 2001. The questionnaire was returned by 757 people, corresponding to a response rate of 46%. Due to omissions of responses to some items, 720 questionnaires were actually used for analysis.

Questionnaires distributed to hospitals represented how they imagined patients perceived medical information. Survey subjects were chief administrators and managers of member hospitals of the Japan Hospital Association (2,621 facilities). The survey method consisted of an anonymous questionnaire sent to 2,621 facilities (two per facility) on October 18, 2001. 1,090 questionnaires were returned, corresponding to a response rate of 21%.
Consumers were asked the following questions: On what basis would you select a medical facility for symptoms you thought showed a common cold?; On what basis would you select a medical facility if you were diagnosed with diabetes?; and On what basis would you select a medical facility if you vomited blood? Administrators of medical facilities were asked the following: What do you think is the basis for selection of a medical facility when a patient believes symptoms may indicate a common cold?; What do you think is the basis for selection of a medical facility when a patient believes symptoms may indicate diabetes?; What do you think is the basis for selection of a medical facility when a patient has been diagnosed with diabetes?; and What do you think is the basis for selection of a medical facility when a patient vomits blood? A maximum of three responses were allowed in reply to each of these four questions.

Results

Responses to the questions about common cold and suspected diabetes are shown in Table 1 and Table 2, respectively. Responses to diagnosed diabetes are shown in Table 3, and responses to the question on hematemesis are shown in Table 4. Although consumers placed great importance on specialization whatever the disease and symptoms, they also placed greater importance on waiting time in the case of the common cold. Accommodations were ranked second or third. The stronger emphasis on physician attitude for a common cold than for a chronic illness such as diabetes was

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<th>Table 1: Basis of selection for the common cold</th>
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<td><strong>Consumers</strong></td>
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<td>Count</td>
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<td>Specialization</td>
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<td>Accommodations (comfort)</td>
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<th>Table 2: Basis of selection for suspected diabetes</th>
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<td><strong>Consumers</strong></td>
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<td>Count</td>
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unexpected. Patients were more concerned about the clinical examination itself than problems of money.

**Hypothesis 1:** Consumers place great importance on specialization, size of medical facility, and on-site medical equipment even for mild ailments such as the common cold.

As shown in Table 1, the question concerning the common cold in fact elicited a response rate of 25% for specialization, 0.5% for size of medical facility, and 4% for on-site medical equipment, completely contrary to the hypothesis. Moreover, waiting time was deemed very important and garnered 20% of responses, more than the other three responses. This hypothesis was therefore judged invalid.

**Hypothesis 2:** When a consumer suspects diabetes, great importance is placed on specialization, size of medical facility, and on-site medical equipment even when there is a possibility of another disease and screening is required.

As shown in Table 2, the question concerning a suspicion of diabetes drew a response rate of 35% for specialization, 2% for size of medical facility, and 16% for on-site medical equipment. Compared to the responses in regard to the common cold, specialization, size of medical facility, and on-site medical equipment were considered more important. This hypothesis can therefore be considered valid.

**Hypothesis 3:** When the consumer is able to determine that his own condition is urgent, importance is placed on specialization, size of medical facility, on-site medical equipment, as well as waiting time.

In this case, the premise is valid for the questions concerning diagnosed diabetes and hematemesis. For the diagnosis of diabetes, the response rate was 33% for specialization, 4% for size of medical facility, and 17% for on-site medical equipment. For hematemesis the response rate was 33% for specialization, 5% for size of medical facility, and 22% for on-site medical equipment. The difference in responses for diagnosed diabetes and hematemesis appears in the response rate for on-site medical equipment. However, this is thought to result from the consumer’s judgment that medical equipment, such as an endoscope, is required to treat hematemesis.

Compared to the common cold, which was considered to lack urgency, more importance was placed on specialization, size of medical facility, and on-site medical equipment. Also, in comparison to the common cold, waiting time was not considered as important as in the cases of diabetes and hematemesis. However, this response may be due to the fact that waiting time is not a great problem in urgent cases at medical facilities in Japan.

**Hypothesis 4:** When the same questions are put to hospital administrators, there is little difference in the basic criteria according to which the consumer distinguishes between mild ailments and ailments requiring urgent care.

Hospitals showed a 32% response rate to specialization in the cases of suspected diabetes, diagnosed diabetes, and hematemesis, compared with a 16% response rate to specialization for the common cold. The response rate regarding on-site medical equipment was 11% for suspected diabetes, 13% for diagnosed diabetes, and 27% for hematemesis, compared to 5% for the common cold. The response rate regarding size of medical facility was 6% for suspected diabetes, 7% for diagnosed diabetes, and 13% for hematemesis, compared to 3% for the common cold, showing an enormous difference in comparison to consumers’ responses to each item. The hypothesis was thus substantiated.

**Discussion**

It has been thought that one reason patients flock to hospitals is that they place great importance on specialization, size of medical facility, and on-site medical equipment even in the case of mild ailments such as the common cold. However, the results of the present study did not support this assumption. There was no distinction between suspected diabetes and diagnosed diabetes in the responses of consumers nor those of hospitals. According to a 1997 diabetes survey conducted by the Lifestyle Disease Taskforce, Health and Medicine Bureau, Ministry of Health and Welfare, there are an estimated 6,900,000 patients with diabetes or suspected diabetes in Japan. Since many of these patients have diabetes, when it is considered that screening for diabetes and discriminating it from other diseases should be performed by the family physician
rather than a specialist in each field, the awareness of the free access system by both consumers and administrators may provide an explanation as to why patients choose hospitals. One reason for the concentration of patients in hospitals may be because waiting time is important when the ailment is believed to be mild and the need for specialization is low, thereby allowing diagnosis by a nearby physician but when diabetes is suspected and screening is required, the patient is likely to bypass the family physician. Moreover, it is surmised that when a patient is diagnosed with diabetes, examinations will continue at the hospital because specialization then becomes important.

Since waiting time for urgent cases is not a great problem in Japan, it was viewed as an even more important factor for mild ailments such as the common cold than for urgent ailments. Conversely, waiting time was not considered very important for comparatively non-urgent ailments such as suspected diabetes.

Perceptions of specialization, size of medical facility, and on-site medical equipment differed between the hospital and the consumer. Although information on medical treatment is asymmetrical, a decrease in such differences can be expected through consumer education. Hospitals clearly judged that consumers place importance on medical equipment and hospitals above a certain scale.

In the present survey, consumers showed little concern for the size of medical facilities and tended to place greater importance on comfortable accommodations than physicians, whatever the circumstances. There was also a tendency for consumers

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<th>Table 4: Basis of selection for hematemesis</th>
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to place greater importance on the physician when considering the attitude of employees. This may be one reason why consumers select hospitals (most prominently, public hospitals) providing sufficient amenities through advance payment in recent years.

Conclusions

The present results suggest the possibility that a patient with a mild ailment, such as the common cold, who is examined and diagnosed with diabetes at a clinic, may in the future be examined at a hospital even though treatment may be performed at a clinic. Furthermore, it may be possible to bring the consumer’s selection of a medical facility closer to being the same as the hospital’s selection by providing the customer with treatment information. Regarding the role of the family physician in making broad diagnoses, there may be a need to educate not just the consumer, but also hospital administrators.

The present survey compared the responses of consumers and hospitals, and not of patients and hospitals. A subsequent study will seek to clarify the differences in responses between hospitals and patients to gain greater understanding of consumer behavior regarding medical services through a comparison with the results of the present survey.

Acknowledgment

This study received research assistance from the Yoshida Hideo Memorial Foundation.

References

Hospital Governance and the Balanced Scorecard – New Concepts for Japanese Hospitals?
John Wocher

As background, all hospitals in Japan with extremely few exceptions, are non-profit organizations, and the head of a hospital, called the Incho, must be a physician. The vast majority of private hospitals are physician owned, and some have been family owned for many generations. Japan has operated healthcare delivery in a fee-for-service reimbursement system with universal coverage since 1961 (Morohashi, 1999). Under this system, the principle measure of success was financial, and for these private hospitals, the governing body was often only a few family members who discussed finances on a monthly basis. Financial reports were usually the sole information discussed in board meetings, and thus the board deliberations were very one-dimensional. Strategy in a declining reimbursement environment was to do more, as the performance goal under fee-for-service was to increase the number of patients being treated and to increase volume of laboratory testing, imaging, and prescription medications.

Beginning in the late 1980s and very early 1990s, the economy of Japan was severely declining as well as the birthrate, while expenditures on healthcare as a percentage of the gross domestic product continued to rise. Today, Japan’s economy has perhaps bottomed out, and the birthrate is at a postwar low. The reimbursement for healthcare treatment has continued to decline, and the response of the government to increasing the co-payment by the patient from twenty percent to thirty percent, was not successful in stemming the high expenditures for healthcare, and only shifted the burden from the government’s pocket to the patient’s pocket while hospital finances suffered (Nakayama, 2002).

Contributing to the hospital’s woes was a spate of medical misadventures in the Japanese media that called into question the quality of care being provided. Concurrently, in the United States and other developed countries, evidence based medicine (EBM) was more than just a fad term, and there was and still is an entire current of movement that embraced the idea of continuous quality improvement. Hospitals in other parts of the world were incorporating International Standards Organization (ISO) efforts into their operations in both management and clinical operations, as well as financial. Six Sigma became a common word in healthcare, and consultancy for more sophisticated and successful management initiatives rose to the occasion. In the 1990s primarily, the idea of the Balanced Scorecard developed by Kaplan and Norton (1992, 1993, 1996) for businesses is now being implemented in hospitals, not only in the United States, but as far away as Singapore.

Japan on the other hand, is still struggling with old issues such as informed consent as addressed by Davis and Wocher (2002) and risk management, which were still borrowed words from the West (Wocher 2000). The concepts of TQM and CQI, long known in the west, were not embraced in Japan, and were actually counterproductive financially (Takahashi 1997), Wocher 1997). Physicians today are still licensed for life, there is no mandatory continuing medical education (CME) required, and physicians are not credentialed nor privileged in hospitals. The hospitals they work in are not subject to any national or local accrediting standards, since there is widespread resistance to the creation of
minimum standards for hospitals that would be subject to periodic scrutiny (Wocher 1999). ISO standards are a rarity in hospitals today.

Japan has seen the prospects for healthcare reform plod along, resisted at every turn, until the financial reality has caused the system to be on the verge of collapse (Wocher 2001). Instead of increasing the patient’s co-payment from the current thirty percent to forty or fifty percent, the concept chosen for its cost control certainty, was the Diagnosis Related Grouping - Prospective Pricing System (DRG-PPS) system from the United States, modified for the Japanese healthcare circumstances (Kawabuchi 2000). Using modified DRG-PPS logic, the addition of a Diagnosis Procedure Combination (DPC) with a per diem weight has the prospects of being implemented in selected hospitals in 2004, and thus begins the financial risk shift from the payer to the provider.

For the Incho and his senior staff, including the medical staff, this means that doing more can no longer be the strategy for financial viability, but in fact delivering minimally appropriate care is the new paradigm shift for success. This means a behavioral change for physicians and patients alike. No longer will the average length of stay in a Japanese hospital of in excess of 30 days be tolerated, but it will not withstand the scrutiny of emerging confidence in evidence based medicine, clinical guidelines, protocols, algorithms or caremaps that all are designed to minimize resources in maximizing successful outcomes.

The governing body in those organizations that are reactive, not proactive, in developing strategies for surviving the risk shift from payers to providers, will be greeted at their monthly meetings by a sea of red ink instead of the usually familiar financial reports. No longer will the one-dimensional financials answer the questions concerning the successful performance of the hospitals. Measures of value will become important, not only business value, but staff and patient value. Keeping patients healthy and out of the hospital will have value to the hospital, the payer, and the patient and his family. Strategies such as chronic disease management will take on increased importance, preventive care will need emphasizing, and the idea that hospitals in Japan can rely on financial and rudimentary quality measures will be a thing of the past. The integration of practice patterns, outcomes measurement, quality, value added (to all stakeholders), cost benefit, and strategic planning will require an approach that is more balanced, and not one heavily weighed by financial imperatives. Although it is ALWAYS about money, it is never ONLY about money, and boards need to look more carefully at performance measurements that have to do with clinical quality of care, not just the bottom line.

**References**


Patients’ Attitude toward Dispensing Pharmacies: Questionnaire Survey Conducted August 15

Yosuke OOE, Shigeyuki TABUSE, and Takehiko AKANO

Abstract

Background: In Japan, the separation rate of institutions prescribing and dispensing medications has tripled in 10 years, and reached 46.0% in 2002. Ever since the Japanese government promoted this separation in 1998, Osaka National Hospital (ONH) has maintained an out-of-hospital prescription rate of more than 90%. To learn patients’ recognition of the separation, we conducted a questionnaire survey on a Bon holiday, one of the traditional holidays in Japan.

Method: On August 15, 2001, we conducted a questionnaire survey concerning dispensing pharmacies that are closed on holidays. In-hospital pharmacists of ONH and pharmaceutical internship students asked outpatients who visited ONH on that day to participate in the survey.

Results: 406 out-of-hospital prescriptions were issued on that day, and 228 questionnaires were collected. In this survey, 53 patients (23.3%) did not know if their dispensing pharmacies were open or closed on that day.

Conclusion: Patients were not so concerned if their dispensing pharmacies were open or closed. We found that the information dispensing pharmacies provided their patients was not adequate. It seems necessary for hospitals and dispensing pharmacies to take more action in cooperatively informing patients of their holidays.

Key Words: Separation rate of prescribing and dispensing, Separation of prescribing and dispensing, Bon holiday, Out-of-hospital pharmacy, out-of-hospital prescription

*Out-of-hospital pharmacy; a pharmacy established in the vicinity of a hospital to mainly serve outpatients of the hospital. It is something like a franchise drugstore of the hospital.

Introduction

Since physicians themselves have conventionally prepared and administered medications in Japan, the progress of separation of prescribing and dispensing has been slow. The system of separation was institutionalized by law in 1956. After that time, hospitals and clinics have increasingly introduced this separation in line with the policies of the Japanese government.

Separation of dispensing and prescribing means more than sharing the burden of prescribing and preparing medications. It places the complementary responsibility on both physicians with prescribing rights and pharmacists with dispensing rights for providing the appropriate medications.

There is also a disadvantage to separation. Since hospitals and pharmacies are operated independently, even patients with prescriptions may not receive their medications when hospitals are open but pharmacies are closed, especially during traditional holidays such as the Bon holidays. The Bon holidays are a traditional, consecutive holiday ranging from before and after August...
15, during which most offices, factories, and stores close their business. Public hospitals are open for outpatients even on such traditional holidays, but pharmacies, most of which are private firms, are usually closed.

According to a private survey conducted on 25 patients for whom out-of-hospital prescriptions were issued on August 15, 2000, 6 patients (24%) did not know if their pharmacies were open or closed.5)

We conducted another questionnaire survey on whether patients knew if their dispensing pharmacies were open or closed, targeting patients who received out-of-hospital prescriptions on August 15, 2001 from ONH.

**Purposes**

Although questionnaire surveys were conducted in the past to clarify the advantages of separation such as shorter waiting time and more detailed explanation of prescribed medications as well as disadvantages such as institutional problems, there have been no reported surveys focusing on outpatients’ attention to dispensing pharmacies.6-12)

We studied how much this separation is accepted and understood by patients by conducting a questionnaire survey on patients’ attitudes toward pharmacies under a separate prescribing and dispensing system.

**Methods**

Pharmacy staff and pharmaceutical students conducted the survey at the outpatients’ payment counter at ONH, targeting outpatients who visited the hospital on August 15, 2001. Questionnaires were distributed to the subjects and collected in front of the Fax Corner at the site. Table 1 shows the items on the questionnaire.

**Results**

On August 15, 2001, 406 out-of-hospital prescriptions were issued, and 228 questionnaires were collected. With the exclusion of one invalid case, the collection rate was 56.2%.

27 patients asked their pharmacies if they were open on that day, 12 patients were informed of the holiday from their pharmacies, and 27 patients mutually discussed it with their pharmacies. 68 patients kept a reserve of their medication in case their pharmacy was closed. 40 patients were not concerned if their pharmacies were open or closed, because they use various out-of-hospital pharmacies. On the other hand, 53 patients did not know if their dispensing pharmacies were open or closed (Figure 1).

**Discussion**

In Japan, the system of separation was legitimately institutionalized in 1956, but the rate of separation was as low as 1% in 1975 due to the traditional custom of receiving medication through physicians. According to statistics of the Ministry of Health, Labour and Welfare, the separation rate of prescribing and dispensing has gradually increased to 12.0% in 1990, 20.3% in 1995, and 46.0% in 2002. The rate widely differs depending on prefectures, ranging from less than 10% to over 50%.

<table>
<thead>
<tr>
<th>Table 1: Items on the questionnaire</th>
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<tr>
<td>1. Do you know if your dispensing pharmacy is open today?</td>
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<tr>
<td>❑ Yes.</td>
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<tr>
<td>❑ No.</td>
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<td>2. How have you been informed if your dispensing pharmacy is open today?</td>
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<tr>
<td>❑ You asked the pharmacy.</td>
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<td>❑ Your dispensing pharmacy informed you by poster or a phone call.</td>
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<td>❑ You have discussed it previously with your dispensing pharmacy.</td>
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<tr>
<td>❑ You are not concerned, because you use various out-of-hospital pharmacies.</td>
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<tr>
<td>❑ Others.</td>
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<td>3. How will you obtain prescription drugs if your dispensing pharmacy is closed today?</td>
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<tr>
<td>❑ You are not concerned, because you keep a reserve of your medication.</td>
</tr>
<tr>
<td>❑ You don’t know.</td>
</tr>
<tr>
<td>❑ You have to find an alternative pharmacy now.</td>
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At ONH, the rate of out-of-hospital prescription has been over 90% since April 1998.

Under the system of separation, medical care cannot be supplied without cooperation between hospitals and dispensing pharmacies. As the separation rate (i.e. proportion of out-of-hospital prescriptions) has increased, the social responsibility of dispensing pharmacies has also increased. In reality though, while public hospitals do not observe the Bon holidays, about 40 percent of dispensing pharmacies do, because they are typically private firms.

Patients who visited Osaka National Hospital on August 15, 2001 chose that day, knowing the hospital is open and is relatively vacant during the Bon holidays. This fact indicates that they might have been biased samples, because they were very accustomed to visiting the hospital. The bias was also seen in their positive actions such as asking pharmacies if they were open (27) and negotiating to reach mutual agreement with pharmacies (27). Patients who kept adequate stocks of their medications and would not be concerned even if their pharmacies were closed (68) also may have been accustomed to visiting the hospital.

In this survey, patients who asked their pharmacies if they were open (27) and patients who were sure that their pharmacies were open (40) may have been attentive to whether their health insurance pharmacies were open or not.

On the other hand, 39 patients were informed by their pharmacies. They consisted of patients who were informed in advance by phone, post card, or poster (12), and patients who negotiated with their pharmacies (27).

53 patients (23%) did not know if their pharmacies were open or closed. Osaka Pharmaceutical Association (OPA) had advised its member dispensing pharmacies to post notice of their holidays at least one month in advance. However, even in cases where dispensing pharmacies had posted such notices, patients inattentive to such notices answered that they were not informed in this questionnaire survey. Results of this survey indicate that patients were not adequately informed by their pharmacies.

According to OPA, 39.6% of a total of 2,560 dispensing pharmacies in Osaka prefecture were closed on August 15, 2001. Even if patients received prescriptions, their medications could not be dispensed because their pharmacies were closed. At the counseling counter of OPA established in Osaka National Hospital, information of the Bon holidays for pharmacies was provided based on a survey performed in advance. From August 13 to 15, 1,531 patients received out-of-hospital prescriptions, and 259 of them (16.9%) were informed.
of alternative pharmacies, because their pharmacies were to be closed during that time.

Since the sample group of this survey consisted of patients who were accustomed to visiting the hospital, the general population of patients might have paid less attention to the holidays of their dispensing pharmacies.

**Conclusion**

Although patients usually pay attention to the holidays of their hospitals and clinics, they pay less attention to those of dispensing pharmacies. This indicates that patients are more concerned with physicians than pharmacists. Information given from dispensing pharmacies to their patients may have been inadequate. This inadequacy was supplemented only by information service at the counseling counter of Osaka Pharmaceutical Association. Active guidance and reminding measures should also be taken by hospitals in the future.

**References**


2) Medical Practitioners Law (Japan), article 4, clause 22.

3) Pharmacist Law (Japan), article 19.


Comfortable Hospital with Breathing Boards

Kunio HASHIGUCHI, Kenji HASHIMOTO, and Masaru AKAO

Summary

Breathing boards have the hygroscopic capacity to keep room humidity in a range from 40% to 70%. When the humidity of room air rises, the vermiculite absorbs extra moisture, and when the humidity of room air goes lower, the vermiculite releases the moisture they have absorbed. Breathing boards can control room humidity and offer a comfortable hospital environment by capturing harmful substances which volatilize from building materials, furniture, etc. and are considered to cause sick building syndrome. They have the ability to prevent the propagation of bacteria.

Key words: Breathing board, comfortable hospital, humidity, sick building, vermiculite.

Introduction

The Shosoin (Fig. 1) is famous for its log cabin style structure called azekura zukuri (granary structure). It was used to store the collection of rare items from Tang China through the prosperous trade route dedicated to Todaiji Temple by Empress Komyou (701-760) after the death of Emperor Shomu (701-756). The Shosoin has been regarded as the final destination of the Silk Road. Triangular logs of wood that interlock with one another at the corners of the building expand or contract according to the weather, and keep the room air clean by controlling the humidity and ventilation of the interior.

Similarly, breathing boards keep the hospital rooms clean by absorbing extra moisture when the sick room air becomes humid and releasing it when the room air becomes dry. The problem is that building materials generate formaldehyde and other volatile organic compounds (VOCs).\(^{(1)}\)

It is well known that allophone\(^{(2)}\) has the function of keeping room atmosphere comfortable thanks to its large number of micro- pores. Vermiculite\(^{(3,4,5)}\) has a complex mineral structure. It is a hydrous iron magnesium aluminum silicate resembling clay minerals such as montmorillonite, and produced in part through the alteration of micaceous minerals by the addition of water in the molecular lattice. Therefore, vermiculite is used as a sound, fire-resistant building material.
inhibitory substances in vermiculite to restrain the propagation of bacteria.

**Materials and methods**

A breathing board was made from vermiculite, Ca (OH)$_2$, SiO$_2$, and pulp by autoclaving at 187°C.

1. Moisture adsorption and desorption capacity of the board was tested. A 100×100×9.5 mm board was placed in a 25°C chamber. The relative humidity was kept at 90% for the first 6 hours and 30% for the next 6 hours. This cycle was repeated 10 times. Weight variations of the board were measured at each half cycle.

2. Humidity control of the board was evaluated in an experimental house with a thermally insulated air-tight construction. In a 39.7m$^3$ room with a 16.5m$^2$ wood floor, breathing boards were used for the walls and ceiling totaling an area of 44.2 m$^2$. The relative humidity in the room and the humidity of outside air were recorded from January 27 to February 22, 2001.

3. Bacterial strain: Strains of Staphylococcus and Bacillus were used in this study.

**Media:** The organisms were all grown in a Brain Heart Infusion Agar for routine work. Vermiculite was tested by spotting drops on an agar plate seeded with indicator strains. After incubation for a week at 25°C, the plates were examined for evidence of inhibition zones.

**Results**

1. The amount of moisture adsorption at the 9th cycle was 42.5gm$^{-2}$ and greater than that of a gypsum board. (Fig. 2)

   In terms of moisture absorbing and releasing performance, vermiculite is nine times better than a gypsum board.

2. Relative humidity in the room was maintained in the range from 40% to 55%, although the humidity of outside air varied extensively. (Fig. 3)

3. The radius of the inhibition zone varied from faint to about 3 mm. (Figs. 4a, 4b)

   Vermiculite boards can control humidity and resist the propagation of bacteria.

**Discussion**

Vermiculite is a hydrous silicate derived from the alteration of mica which consists of natural clay having a large number of ions, and whose granules expand greatly at high temperatures to give a lightweight, highly...
water absorbent material often used in seedbeds. This was selected as the breathing material in walls, floors, and the ceiling.

Vermiculite could be well regarded as a tri-octahedral member of the smectite group, but its special characteristics warrant its description as a separate mineral. The structure of vermiculite is basically similar to that of talc since it contains a central octahedrally coordinated layer of Mg and Fe ions which lies between two inward pointing sheets of linked SiO₄ tetrahedra. As in talc and phlogopite, the central part of this composite layer may be regarded as one of brucite in which two out of three OH ions on each side are replaced by the apical oxygen of a SiO₄ tetrahedron. In talc, the layers as a whole are electrically neutral, no interlayer cations occur, and cohesion between successive sheets is very slight. In vermiculite, the principal changes from the talc composition, Mg₆Si₈O₂₀(OH)₄, are a replacement of Si by Al, compensated by the presence of interlayer cations, mainly magnesium. A further difference from talc is the occurrence of water molecules between the structural layers.

Chemically speaking, vermiculites are similar to trioctahedral smectites, since both consist of talc-like layers in which a deficiency of positive charge is compensated for by the presence of some interlayer cations. In montmorillonite and hectorite this deficiency is caused by substitution in the octahedral part of the composite layers and is compensated on the average by 0.66 monovalent ions or their equivalent. The most common interlayer ions in smectites are sodium and calcium, although magnesium sometimes occurs in this role. In vermiculite, a larger charge deficiency is principally caused by tetrahedral substitution as in beidellites and saponite (Al or Fe³⁺ for Si) and is compensated generally by about 0.7 divalent cations or their equivalent, between the layers. In natural specimens these are most commonly magnesium ions, although calcium and very rarely sodium also occur. Accordingly, the cation exchange capacity of vermiculite is greater than that of smectites, and is indeed the highest of all clay minerals. Vermiculite can be subdivided into two types. One is derived from the alteration of biotite or phlogopite, contracts to a 10 to 10.3 Å phase when treated with K⁺, and has a cation exchange capacity of 260 to 150 m.eq./100 gm. The other is derived from non mica minerals, contracts to 11 to 12.7 Å on treatment with K⁺, and has an exchange capacity of less than 150 m.eq./100 gm.

The naturally occurring interlayer cations can be exchanged for others, so that vermiculites with Mg, Ca, Na, K, Rb, Cs, Ba, Li, H, and (NH₄⁺) as interlayer cations can be prepared. Vermiculites and trioctahedral smectites both contain water molecules between their talc-like layers but the amount of water taken up by natural vermiculites is less variable, and the maximum for them corresponds to two layers of water molecules in each available space.

The amount of water which is accommodated in the vermiculite structure is influenced by a number of factors such as the size, charge, and abundance of the interlayer cations, and the dipole moment and dielectric constant of the liquid. In the point of optical and physical properties, vermiculite occurs with minute particle size as a constituent of soil clays. It is also found in large crystalline plates, principally when it is an alteration product of biotite.

![Fig. 5: Structure of vermiculite](image-url)
One of the two main types of occurrence of vermiculite is as an alteration product of biotite either by weathering or by hydrothermal action. Derived in this way it is found sometimes as large crystal pseudomorphs after the mica, but it is also widespread as a clay constituent of certain soils. The second major occurrence of vermiculite is in the region of contact between acid intrusives and basic or ultra basic rocks such as pyroxenites, peridotites, dunites, etc. In these circumstances it is found to be associated with corundum, apatite, serpentine, chlorite and talc.

The breathing board, such as allophane and vermiculite, keeps the room air healthy and comfortable at all times by absorbing extra moisture during high humidity and releasing it during low humidity. (Fig. 6) In vermiculite, breathing is caused by releasing water molecules from the interlayer of vermiculite when the room air becomes extremely dry and absorbing them into the interlayer when the room air becomes extremely humid. Many building materials contain formaldehyde and other harmful substances. Formaldehyde, toluene, and other volatile organic compounds (VOCs) generated from building materials and furniture, etc., have adverse effects on the human body. However, it is a health risk problem and also requires ecological risk assessment, such as for endocrine disrupting chemicals. The breathing board adsorbs formaldehyde and toluene. Toxic chemicals exposed during development disrupt the endocrines and the nervous and immune systems of humans. Many chemicals released into the environment act as mixtures, and it is difficult to find out the cause and effect relationship of chemicals. More approach of ecosystems to toxic chemicals is needed such as using chemical footprints locally or globally.

The remains and excretion of mites account for 80% of house dust. They cause allergies. Mites grow where humidity is higher than 80%. Bacteria and fungus grow easily on walls and floors. They propagate in environments with a humidity of over 80%. The breathing board hardly gathers them, because it has the ability to keep a comfortable humidity for human beings in the range from 40% to 80% and resists the propagation of bacteria. Vermiculite has outstanding absorbing power compared to earthen walls and vinyl wallpaper, and can improve living environment by preventing the occurrence of bacteria and fungus and the deposition of dew on the walls.

Studying the relationship between human activity and changes in the global environment, we define the issue as a complex mechanism that need to be tackled from many perspectives, including social science, technology, ecology and ecosystems. Toxic chemicals exposed during development disrupt the endocrines and the nervous and immune systems of humans. Many chemicals released into the environment act as mixtures, and it is difficult to find out the cause and effect relationship of chemicals. The breathing board helps to keep a comfortable atmosphere in hospitals to prevent global contamination by toxic chemicals.

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「Japan Hospitals No.24」(July 2005) の原稿募集！

Japan Hospital Association is soliciting manuscripts for the next issue of 
Japan Hospitals (No. 24, July 2005)

1. 募集内容 本誌は日本の医療や病院の実情を海外に紹介、PRするもので、看護の実態とか医療制度の問題なども含み、関連する論文や研究報告など他誌に発表されていないものとする。（国内既発表のものの翻訳で国外未発表のものは可）

2. 読者対象 国際病院連盟（IHF）のA会員（各国を代表する病院協会または政府機関）及びアジア病院連盟（AHF）の会員（同）ほか関係先。国内では大学医学部附属図書館等。

3. 原稿様式 ① A4用紙に英文でワープロ使用、フロッピーディスク提出を原則とする。プリントアウト原稿と日本語の要約も添付する。
② 図、表、写真（モノクロのみ）は鮮明な原画を添付する。
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② 初校のみ著者校正あり。
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