Choosing Wisely: 
Implications for Cost Savings on Healthcare in Japan

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This paper is an expanded version of a talk I gave at the International Forum on Quality and Safety in Healthcare, Japan 2014.

In preparing this paper I referred to a 2012 publication, Japan Health Delivery Profile. As well as indicating some areas where improvements are already occurring, it highlights many of the problems facing the provision of healthcare in Japan:

The health insurance system is coming under increasing pressure from an ageing society and relatively smaller workforce...Maintaining universal health insurance coverage together with the increase in national health expenditure is the biggest challenge currently facing Japanese healthcare delivery.

I present here a more detailed analysis of some aspects of this problem based on my experience of working as a general practitioner (GP) in Tokyo, and discuss how the current payments system wastes money, encourages bad practice and may harm patients. I also offer some suggestions for dealing with the problem of financial sustainability of the Japanese health service.

Funding of the Health Service

One of the striking aspects of health service funding in Japan is that it is based entirely on the fee-for-service principle. Hospitals and clinics are reimbursed by the government according to the numbers of consultations given, tests performed and drugs prescribed. Thus there is an incentive to do as much as possible: many tests, drugs and follow-up appointments.

This system contrasts with that in the UK National Health Service (NHS) which is largely a budget-based system. It is free at the point of use and paid for by the Department of Health according to a formula related to population and specific local needs. There is no billing to patients and this saves huge administration costs. There are some incentive payments for GPs for meeting management targets for chronic diseases such as asthma and diabetes, and for implementing some preventive measures (regular blood pressure checks, immunizations, cervical smear tests). Interestingly, there are also extra payments for the avoidance of emergency hospital admissions and for compliance with the minimum time a GP should devote to each patient at an appointment! So in the UK in general the incentive is to do the minimum necessary and economize where possible. While the system is by no...
means perfect and the NHS is facing its own funding crisis, I believe there are some useful lessons the Japanese healthcare system could learn from the NHS.

**General Practitioner service — lacking in Japan**

There are very few general practitioners — in the UK sense — in Japan.

A general practitioner is a doctor who has undergone post-graduate training in a wide field of medical practice. This means, as the doctor of first contact, he or she can deal competently with the majority of patients’ problems, including those of babies and children, and is able to recognize the more serious disorders requiring specialist attention or hospital admission. In such cases the GP would make appropriate referrals and usually be responsible for follow-up when the patient is discharged from hospital. Further, since patients are registered with a particular doctor (though free to change to another if they wish) the GP, through knowledge of a patient’s medical, family and social background, has an overview of the patient’s medical situation and thus can provide *continuity of care*. This helps to avoid fragmentation of care which is likely if patients consult specialists independently. The GP system also helps to relieve pressure on hospitals, which is where most medical care is delivered in Japan.

A doctor wishing to follow a career in general practice — which I have found extremely rewarding — would typically spend some years doing post-graduate training in a number of major specialties such as pediatrics, obstetrics and gynecology, orthopedics, geriatric medicine, emergency medicine or psychiatry. He or she would also attend clinics or do short internships in specialties such as ophthalmology, otorhinolaryngology, dermatology, sexually-transmitted diseases, etc. In addition, a GP might have a special interest, for example in psychotherapy, minor surgery or sports medicine. This training would then be followed by a period working in a practice under the supervision of an experienced senior colleague.

But surely it is better go direct to a specialist rather than see a GP? The answer is that it is not necessarily better, and it may, indeed, be disadvantageous. This is because a specialist, seeing a patient for the first time with a complaint in his particular field, will tend to carry out full investigations, because that is what his department is organized to do, and may not have the time to explain why investigations are not needed (if this is the case).

For example, if a patient directly consults a hospital cardiologist complaining of chest discomfort, it is likely an ECG, echocardiography, blood tests and possibly a cardiac CT scan will be ordered to rule out heart disease. During this process it may be that marginally raised blood pressure and high cholesterol are coincidentally found. Treatment might then be started for these risk factors and the patient followed up for an extended period by the hospital. On the other hand, if the patient had visited his GP first, it may have turned out quite differently. Seeing a familiar face, the patient might have admitted he was worried about his heart because a co-worker recently had heart trouble. With a detailed history and a simple but thorough physical examination, the GP may well have been able to reassure the patient that there was no reason to suspect heart disease and that investigations would not be necessary. Further, the opportunity might have been taken to advise the patient, if appropriate, to lose weight, reduce alcohol, stop smoking and take more exercise. This is true preventive medicine.

As another example, I have seen more than one case where a young woman presented to a gynecologist with amenorrhea. Hormone treatment was prescribed. Unfortunately, the gynecologist did not examine the patient above her waist and failed to realise she was suffering from anorexia nervosa, a psychological condition.

In a GP’s daily practice, where patients of all ages with any sort of problem may attend at short notice, many constitute the ‘worried well’ who seek reassurance or have straightforward medical conditions needing little or no investigation and which may be treated, if necessary, with a simple prescription. The GP is also well-placed to do routine follow-up of chronic conditions. Relatively few patients will need hospital expertise.

Although this puts a larger burden on doctors in the community, which in Japan would require much investment in the training of many more GPs, it would
release hospitals from the burden of having to provide initial assessment and follow-up for so many patients who could successfully and conveniently be cared for outside hospital.

Such a system would also encourage better use of specialists’ expertise, by referral for an opinion, with follow-up treatment, if needed, being provided by the GP. As an example, if a patient had a chronic productive cough, he or she might be referred to a pulmonologist for confirmation of the diagnosis of suspected COPD and for advice on treatment. After focussed investigations the patient would be referred back to the GP for follow-up, and the GP’s knowledge would thereby be enhanced by such collaboration.

**Approach to illness**

The difference between the approach to illness in Japan and Britain might be summed up by the advice given on the television by a senior public health doctor during an influenza outbreak a few years ago. In Japan the public was told:

*If you think you’ve got flu, go directly to hospital.*

In the UK, the recommendation was:

*If you think you’ve got flu, stay at home until you’ve recovered.*

What underlies such differing advice? Is it the Japanese traditional paternalistic approach where ‘the doctor tells the patient what to do’, which might be characterised as ‘illness-centred’ or, again, is it driven by the need to generate income from consultations, tests and prescriptions? The British approach might be considered more ‘patient-centred’ or at any rate as one that takes into account the need to avoid unnecessary hospital visits and expenditure on healthcare. (Of course, the circumstances where medical advice should be sought for influenza were also mentioned.)

Patient-centred medicine is not only aimed at reducing costs; it is as much concerned with patient satisfaction. With the illness-centred approach a patient may politely thank the doctor and turn away disappointed, to take himself elsewhere for the whole exercise to be repeated in the hope of a different outcome. For the doctor, especially when seeing fifty patients or more in the course of a day — this happens in Japan all the time — an encounter with a patient is routine, of no great moment. For the patient, on the other hand, the medical visit is likely to be a source of anxiety, or even foreboding.

What does patient-centred medicine mean in practice? In Japan, medicine is conservative and hierarchical, with doctors held in high esteem. Although this is changing, change is slow, partly because the system encourages a large workload. The tendency is for there to be little discussion with the doctor and questions are not encouraged. The doctor may say to the patient, ‘You need a scan’, because the machine is available and the hospital makes money by doing it. In the UK a patient may say, ‘I need a scan’, and the doctor would then explain why it is not necessary (if it is not), and questions are (or should be) welcomed. Simply put, patient-centred medicine means doing what is best for the patient, making the care of the patient one’s first concern and working in partnership with him or her. The concept is set out in detail in the UK General Medical Council’s guidance called *Good Medical Practice*.³

**Excessive reliance on tests**

The time-honoured way to make a diagnosis is by taking a history and performing a physical examination. Then, if necessary, tests can be done to confirm or exclude a suspected diagnosis. It has been said that if after the history and physical examination one does not have a fairly good idea of what is wrong with the patient, or at least know in which system of the body the disorder lies, it is unlikely that tests will be of much help. Thus:

\[ H + \text{PE} (+ \text{tests}) = D \]

(H = history, PE = physical examination, D = diagnosis)

In Japan, on the other hand, it often seems to go like this:

\[ h + \text{TESTS} (+ \text{pe}) = D \]

(Lower case indicates less importance, and upper case more importance, is placed on these aspects of the approach to diagnosis.)
While of course there are cases where full investigation is essential, in my experience in Japan there often seems to be excessive reliance on tests as the main approach to diagnosis. On many occasions they seem to be done routinely, or as a result of unthinkingly following a protocol or even according to the rules of a particular hospital.

Is this because some Japanese doctors lack the confidence, or have not been trained to make a clinical diagnosis, or is it because of an underlying need to make a profit for the institution, or perhaps it is combination of these reasons?

Apart from being wasteful, testing without clinical indications may give misleading results and be harmful to patients.

I believe tests should always be done for a reason, which the ordering clinician should be prepared to justify. How will the result affect the patient’s management? If the result will make no difference, the test should not be done. Medicine is an inexact science and it is important to keep in mind that there may be false positive and false negatives. Results always need to be interpreted in the light of the patient’s particular situation and should not be applied in a routine way, or instead of a physical examination.

When I was in practice, from time to time patients would consult me expressing dissatisfaction that they had seen a doctor at so-and-so hospital, and say he never even touched me. For example, it is possible for a pregnant woman to undergo antenatal check-ups in Japan with the doctor hardly ever putting his hand upon the woman’s abdomen, this function being taken over by an ultrasound scan at each visit.

In regard to preoperative testing, an article in The Lancet in 2003 had this to say: “A thorough clinical preoperative assessment of the patient is more important than routine preoperative tests, which should be requested only when justified by clinical indications.” Nonetheless, extensive preoperative testing seems to be routine in most hospitals in Japan.

For example, I referred a fit middle-aged man with a ganglion at his wrist to an orthopaedic surgeon at a University hospital. The patient was expected to undergo routine blood tests, an MRI scan of the ganglion and even a chest X-ray. When he balked at this, I referred him to a general surgeon at another hospital. The ganglion was removed without any tests being done and no post-operative drugs were prescribed. This seems to be unusual.

There is excessive use of imaging in many specialties. If a patient attends hospital with an acute headache it is likely that a CT scan will be carried out as a first step. This is presumably to exclude a brain tumor — a rare disease. The doctor may not attempt, or perhaps will be unable, to diagnose on the history. Thus, the patient would be subjected to unnecessary radiation when he may have been suffering from migraine or a tension headache; these are clinical diagnoses.

Another patient I encountered attended a local clinic with a persistent cough. A chest X-ray was taken which was normal. Because this didn’t show any cause for the cough the next step was a chest CT scan — equivalent to the radiation dose of about four hundred chest X-rays. The patient had asthma, which is mainly a clinical diagnosis.

In the case of low back pain, X-rays and/or MRI scans are regularly done even though there may be no reason to suspect a serious rare disorder such as cancer or tuberculosis. The result makes no difference to the management in the great majority of patients.

Another patient consulted a hospital dermatology department with small lesions on the back of his hands. They were obviously verrucae vulgaris. However, the patient was subjected to a biopsy to confirm the diagnosis — painful, inconvenient, risky and pointless.

In many cases, no matter with what disorder a patient presents to hospital, routine haematological, biochemical and serological tests are carried out, often repeatedly, even though there is no reason to suspect a disorder which these tests might reveal. It seems to be part of the ‘just in case’ mentality, which I do not think is a sound basis on which to practice medicine. The chance finding of blood test results with the numbers outside the quoted reference ranges (typically a low white cell count, raised lipids or liver enzymes levels) may lead to follow-up with repeat testing, specialist referral or instigation of treatment — with all the attendant iatrogenic anxiety and cost to the health
service that this entails. A better approach, in case relevant investigations show a possibly significant abnormality, would be referral back to the GP for consideration of whether further action is needed.

The justification for so much testing one sometimes hears is: ‘I cannot say there is zero possibility of X disease and therefore I need to do a Y procedure/scan/blood test.’ Maybe this is because of difficulty in accepting uncertainty. Yet uncertainty cannot be avoided in medical practice, nor indeed in life in general.

**Over-prescribing**

From my observations it is remarkable how much over-prescribing occurs. Polypharmacy is the rule. When I was in practice I would regularly come across examples of unnecessary, excessive or illogical prescribing, such as the following:

- Any injury to the skin — traumatic or surgical — almost routinely followed by prescription of antibiotics. On the other hand, the offer of administration of a tetanus toxoid injection for a potentially contaminated wound would be rare.
- The very common, almost routine, co-prescription of a proton-pump inhibitor with other medicines.
- The widespread use of intravenous infusions. It is curious that in Japanese hospitals one can often see patients wandering around with mobile drip stands. Such treatment often has no advantage over oral medication and, apart from the inconvenience and cost, carries risks: infection, embolism and fluid overload. I have seen in a hospital waiting area children with intravenous lines attached to their arms being fed snacks by their mothers!
- In psychiatry polypharmacy is rife. A depressed patient may be prescribed two kinds of anti-depressants, an anti-psychotic, two types of benzodiazepines and a proton-pump inhibitor, continued for months or years. Probably, if drugs are needed at all, one kind of anti-depressant only might be appropriate.

From time to time I have asked psychiatrists why this happens. Apart from lame excuses such as that this is the traditional system or the hospital protocol, the only attempt at scientific justification I have heard is that two or more types of anti-depressants may act in slightly different ways so a synergistic beneficial effect will occur. All that is likely to happen, in reality, is that side-effects will be multiplied.

- Antibiotic prescribing. My observations lead me to conclude that microbiology is poorly taught in Japan. Antibiotics are often prescribed apparently unthinkingly. What is the likely infecting organism? What is the appropriate antibiotic for this infection, bearing in mind possible side-effects? Is an antibiotic needed at all? Broad-spectrum cephalosporins of the latest generation as promoted by drug salesmen often seem the first choice, typically being prescribed in small doses for three days. This encourages follow-up visits at increased cost to the health service, and can result in inconvenience to patients as well as the risk of side-effects and the emergence of drug-resistant strains. Paradoxically, it is my experience that where culture and sensitivity testing of infected material may be useful, this is not often performed.
- The use of broad spectrum antibiotics for infections that are clearly of viral origin is widespread, and even in a suspected bacterial cause the most appropriate antibiotic may not be used. For example, if it is thought a patient has bacterial tonsillitis and needs an antibiotic, phenxymethyl penicillin would be the drug of choice. Unfortunately, it is not available in Japan — probably because it is cheap and drug companies do not find it profitable to market it.
- There is available in Japan a combination of an anti-histamine and corticosteroid in an orange-coloured syrup for children. It looks exactly the same as the product containing the anti-histamine alone and this could lead to dispensing errors. There are few situations I can think of where such a combination would be appropriate. Yet when I took this up with the manufacturers I was told there is a demand for this product by Japanese pediatricians.
Over-the-counter medicines are notorious for containing small doses of multiple ingredients. I have seen a child suffering severe constipation from taking an OTC preparation containing codeine.

A young Japanese woman came to me for a routine examination to apply for an Australian student visa. She had been under drug treatment for epilepsy for the last seven years. The history was that she had fallen while taking a shower. The mother panicked and called an ambulance. The emergency room doctor diagnosed epilepsy and prescribed an anticonvulsant which had been continued ever since. Apparently, no senior doctor had reviewed her case. I thought she had probably suffered a simple syncope. This resulted in a delay in obtaining her visa to study abroad.

In Japan there is a lack of national guidelines on effective, safe, and cost-effective prescribing equivalent to the British National Formulary5 (updated biannually), or a body such as the National Institute for Health and Care Excellence (known as NICE) in the UK which approves, or not, medicines and procedures for general use.

Check-ups

In Japan every year millions of people of working age—the healthiest sector of the population—are obliged to take time off from work to undergo a health check, the so-called ‘Human Dock’ examination—which almost jokingly implies that the human body is like a ship which needs to be put into dry dock from time to time for an overhaul.

What is the evidence that these check-ups do more good than harm? Are statistics kept, and published, of the numbers of significant abnormalities found in these ostensibly healthy people? Does an asymptomatic person in mid-life really need a routine ECG or an abdominal ultrasound? The likelihood of a significant or treatable abnormality being found is minute.

The results of these tests are patronisingly presented in a standard form as if it were a school report, with Grades A to F. A means everything is all right, B to D may indicate further tests or life-style changes are recommended, and if you get an E or F you may think you are really in trouble. Apart from causing anxiety, this can lead to unnecessary specialist consultations and further tests. It is big business! There are many clinics in Japan which do nothing but check-ups. The promise of pre-symptomatic detection of significant disease is dubious. Yet these check-ups are promoted as useful and even necessary to maintain health.

Are they cost-effective? Other countries which have tried routine check-ups, for example, the UK and Denmark, have concluded they are not likely to lead to improved health of the population and they often cause anxiety.

What is beyond dispute is that the Human Dock system in its present form involves a vast amount of medical activity with enormous associated costs in man-power, laboratory tests, imaging procedures and follow-up, which are paid for by the government via taxation. It seems to me that unless it can be demonstrated that this exercise is cost-effective it should be re-thought or even abandoned.

Palliative and terminal care

The following situation, in which I was involved, unfortunately happens all too often in Japan.

The Japanese wife of a western man developed stomach cancer and was treated at a University hospital in Tokyo with a total gastrectomy. For some months she was reasonably well. Then her condition deteriorated with weight loss, anorexia and abdominal swelling. A local hospital looked after her at home with a doctor visiting once a week. This treatment was not of the highest level, with the prescription of multiple drugs some of which were inappropriate and caused side-effects, and drugs which were needed for effective symptom relief not being used. Her condition progressed to the point where re-admission was unavoidable. In the hospital her care was shared between several doctors, none of whom appeared to be in overall charge, and it seemed no one was prepared to explain to the patient or her husband what the situation was and what they were trying to do about it.

But the worst failing was reluctance to use a proper pain-relieving drug, that is, morphine. Was this difficult? Did it require specialised knowledge? No. It required basic knowledge of terminal care,6 easily
accessible to any doctor. The husband in this case had to make a thorough nuisance of himself before the staff would bestir themselves to give her morphine. Fearful of what might happen if he wasn’t there, he would not leave her side. Although she was in a single room, would they provide a bed or futon for him? No. He had to make do with two chairs. Were the staff concerned enough to ensure he could leave to obtain some food for himself and then return to the hospital? No. The place was locked up at night.

The principles of pain relief in this situation are that morphine must be given in an adequate dose to relieve the pain and it must be given regularly in order to prevent return of pain. It can be given by mouth or injection. The patient, or her husband, should not have had to beg for morphine. Were the hospital doctors afraid that a terminally ill patient may become addicted? Were they afraid that such a patient’s life may be shortened? Are there rules that limit the dose and frequency of the administration of this merciful drug? Were the doctors incapable of understanding that when someone is dying, treatment aimed at cure or prolonging life is futile, and the focus of treatment must change to assist the patient to achieve a good — that is — pain-free death? It must be stressed this is nothing whatever to do with euthanasia. In practice, with skilled administration of morphine, when a patient’s pain and distress are relieved, they may well live longer and die peacefully.

These problems have long been recognized, and although excellent hospice care is available in Japan, it is not nearly adequate for the needs of the population. In the meantime, at least basic palliative and terminal care should be provided in ordinary hospitals.

Summary: Suggestions for improving the health service and saving money

1. The system of payment to hospitals and clinics needs to be changed so that a budget is allocated instead of the item-of-service payment.
2. The education of doctors should put more emphasis on clinical judgement and less reliance on tests. Tests should be justified every time. How will the result affect the patient’s management?
3. The Human Dock system of general check-ups should become evidence-based. If there is no evidence that certain tests — for example, routine chest X-rays or blood tests, or upper GI endoscopy — lead to a significant reduction in morbidity and mortality, they should be modified or abandoned. Maybe the whole system needs to be re-thought.
4. Prescribing should follow national guidelines which need to be established, perhaps along the lines of the British National Formulary.
5. A general practitioner service should be developed. In the UK, 95% of problems presenting to a general practitioner can be handled by him or her. Thus, the huge numbers of patients attending hospitals could be reduced.
6. There needs to be coordination across health service hospitals and clinics, with easily accessible centrally held or patient held records. Thus, reduplication of tests and treatment can be avoided. With Japan’s computer expertise this surely can be developed.
7. A system of palliative and terminal care, such as that provided in hospices, needs to be developed and extended so that it is available to all who need it.

References
7 Yamazaki F: Dying in a Japanese Hospital, 1996, Tokyo, The Japan Times.