Should General Physicians or Subspecialists Undertake Acute Medical Care in Public Hospitals?

YC Chee,[1] *FAMS, FRACP, FRCP (Lond)*

Abstract

Acute medical care in public hospitals may be handled differently in different countries. As general physicians in Singapore are trained to deal with undifferentiated clinical problems and run most of the admitting wards, they are suited to take care of patients with acute medical problems. The exceptions to this rule are made for patients accurately diagnosed with stroke and acute coronary syndrome, who have better clinical outcomes if admitted directly to stroke units and coronary care units respectively. In the diagnostic workup, general physicians are trained to practise probabilistic medicine, and thus to order more focused investigations to rule in or rule out certain diagnoses. The subspecialist is more inclined to exclude possible diagnoses in his or her field. Once there is a clear-cut diagnosis, for primary care, it is up to the patient to decide if his primary doctor should be a generalist or subspecialist. An important role for the general physicians who manage patients with multiple diseases is constant medication review to shorten the list of drugs.

Ann Acad Med Singapore 2005;34:720-2

Key words: Clinical outcome, Probabilistic medicine

Introduction

First, the definition of terms is necessary. The general physician in Singapore is on the Specialist Register, on par with the cardiologist, neurologist, and so forth. He or she has undergone 6 years of structured training with advanced training focused on closing the gaps in subspecialty fields, critical thinking, decision making and communication skills in the context of elderly or younger patients with co-morbidities and multiple medications. So this is quite unlike the USA, where after a residency of 3 years and Board Examinations in Internal Medicine, the doctor can become a primary doctor or "hospitalist". In the UK, most physicians in the NHS hospitals have dual certification, and although trained in both general internal medicine and a subspecialty, they tend to practise mainly in their subspecialty. In Singapore, the general physician, if he has a subspecialty at all, is usually skilled in an as yet unofficially recognised field, e.g., obesity medicine, obstetric medicine, vascular medicine.

Second, our public hospitals provide early and easy access to patients who come to the Emergency Department (ED) without having seen a primary care doctor for a referral letter. In our busiest Emergency Department, the caseload is 400 to 500 cases per 24 hours, with many coming in using the public emergency ambulance service (which usually rejects cases that are not ill enough or are not emergencies). So, out of 100 admissions per 24 hours, about 70 cases would require medical rather than surgical (general surgery/orthopaedic surgery/neurosurgery) attention. Of these 70, probably 50 would be admitted to a general medical ward for the general physician's attention and management, while the remaining 20 would be spread across the subspecialties of cardiology, neurology, respiratory medicine, gastroenterology, infectious disease, geriatrics, etc.

And so, the question I wish to address in this context is, "Who should undertake the care of these 70 patients admitted into non-surgical wards?".

[1] Clinical Professor and Senior Physician
Department of General Medicine, Tan Tock Seng Hospital, Singapore
Assistant Chief Executive Officer (Clinical)
National Healthcare Group, Singapore
Address for Correspondence: Professor Chee Yam Cheng, Department of General Medicine, Tan Tock Seng Hospital, 11 Jalan Tan Tock Seng, Singapore 308433.

Emergency Department Triage

Our emergency physicians do a great job triaging who can go home after the consultation and who needs further observation and care. We are all aware of the costs of hospitalisation and the ever-shortening average length of stay of inpatients. So we are starting observation wards at the ED and patients can be managed there for up to 23 hours to save on hospital admission.

By consensus of, and approval by, the Medical Board of the hospital, certain admission protocols are in operation. These protocols deal especially with the types of patients with particular diagnoses or conditions who should be admitted to the subspecialty beds. For these patients, it is definite that the outcome of their hospital care would be better if they went directly to the subspecialist.

Who are These Patients?

I will give some examples and also state that this is an area in flux. As new technologies reach the clinical scene and are shown to impact positively on clinical outcome, the list will change. It is not just a matter of skills and expertise but also time windows for effective treatments to be given that determine this list.

We all know the treatment for patients with acute myocardial infarction. If they were in shock, they would be resuscitated at ED, and admitted straight to the coronary care unit. There they would be monitored and their vital signs supported with medications, acute pulmonary oedema and arrhythmias appropriately managed, etc. That was 30 years ago. There was no need for a cardiologist to do this. When the patient recovered sufficiently to go to the general ward, he was rested in bed for a full 6 weeks, with gradual ambulation after 2 weeks so that he could walk home. Today, the treatment is markedly different.

With acute coronary revascularisation as the prime objective, we aim not just to save life but to save myocardium. Time is myocardium. The longer the time taken to revascularisation, the more likely more muscle will die. So we all agree that the patient goes straight for coronary vessel study with a view to angioplasty and stenting. Time is of the essence; bypass all other physicians (and surgeons) as well as the non-interventional cardiologist.[1,2]

Another common scenario is the patient diagnosed with stroke. If co-morbidities are few and pre-morbid health is of good quality, an urgent computed tomography (CT) scan to detect cerebral haemorrhage is made. If positive, the patient should go to the neurosurgeon (if bleed is superficial and large), or to the neurologist, even if it is only an infarct rather than a bleed. Stroke units have been shown to give better care and outcomes to patients, not so much because of who the physician is (general physicians or neurologists) but because of the set-up, work flow, protocol and the multi-disciplinary team managing them.[3]

I could go on to list other cases who should go directly to the subspecialist, but for the majority of cases, the 50 out of 100 admissions, the general physicians take charge, and why?

Diagnostic Workup

It appears to me that 2 different principles are operative in how subspecialists order the workup for their patients. One principle is to exclude certain diseases/diagnoses. It is cost beneficial if these are common conditions, but to exclude every rare disease in every patient is, to me, a waste of resources. I suppose this practice is fuelled by the history of having missed the diagnosis of a particular disease in one's past experience. The other principle is to order tests according to what the clinical presentation and findings lead one to logically conclude, i.e., to rule in disease X and rule out disease Y. So in a patient with anaemia with an obvious source of blood loss, i.e. menorrhagia, the serum ferritin is about the sole test I would order. But another may ask, "How do you know it is not haemolysis (autoimmune or otherwise) or a vitamin B_{12} deficiency?". My answer would be, of course, it is possible, but the clinical evidence does not lead me to consider them probable.

So is it true that subspecialists would go all the way doing tests to ensure that the patient's clinical problems do not fall into one of the diagnoses in his field of subspecialty? If so, he would do all the tests to exclude many conditions, common and rare, before informing the patient that he should go and consult another specialist. I believe the general physician operates on the other principle – that common things occur commonly, and there are atypical or rare presentations of common diagnoses to be considered. It is more likely that probabilities, rather than possibilities, direct the list of tests done in the diagnostic workup.

Medications Galore

Each subspecialist, after making a diagnosis, would define a plan of management, after which medication may be prescribed. It is not uncommon for conditions such as stroke, heart disease, diabetes, and hypertension to require several drugs per diagnosis. So very often, the frail elderly receives 10, maybe 15 or 20 medications to take daily, some once, others twice, thrice or 4 times a day. Of course drugs will interact, but with good health information systems and electronic records, these unwanted interactions could be minimised.

Nonetheless, patients seeing several subspecialists will often bring their bags full of medications to the general physicians for review. My job is to cut down on this list. The best way is to use the evidence available on drug efficacy,

which is NNT – the Number of patients Needed to Treat.[3] If the NNT is low, for example, 1, that means it will work in every case. So the list of medications could be prioritised by NNT, with drugs having larger NNTs at the bottom of the list (which can be removed if there are too many medications).

This is a function of great value and the general physician who reviews all the diagnoses and medications is best placed to save the patient from harm and cost and cut out the less necessary medicines.

The Primary Doctor

Any doctor, general physician or subspecialist, can be a patient's primary doctor. If a patient has one diagnosis affecting one organ, by all means let the subspecialist be the primary doctor if the case is difficult or complex. However, if many diagnoses reside in one patient and several organs are dysfunctional or at risk, a subspecialist may choose not to be primary doctor. The patient himself may desire a general physician as the primary doctor. In my view, more and more such patients are requesting for this. And so in acute care, let the general physician be the primary doctor. When the conditions are settled, the patient can be referred to his family doctor for continuing care.

While still in acute care, the primary doctor, I am confident, will call on the relevant subspecialist for necessary care, if needed.

Conclusion

I have laid out my case for who should undertake the care of patients admitted to public hospitals for acute medical care. It is based on 2 sets of principles. The first states that those with as yet undifferentiated problems should go to the general physicians. The corollary is that patients with well defined and easily diagnosed conditions like acute coronary syndrome [using electrocardiocardiogram (ECG) and troponin levels to confirm] and stroke (using CT scanning), which in addition have short time windows to deliver effective treatment, should go straight to the cardiologist in the critical care unit or neurologist/neurosurgeon in the stroke unit/neuro intensive care unit.

The second states that general physicians tend to logically deduce diagnostic tests to rule out or confirm a shortlist of differential diagnoses. It is rare for a general physician to do tests to exclude every possibility of a diagnosis in a particular patient (because the list of possibilities is inexhaustible and the cost for doing so prohibitive). Subspecialists may on the other hand feel more pressured and inclined to do all the tests to exclude possible diagnoses in their field of subspecialty for fear of missing a diagnosis in any individual patient. The acid test of this having happened is when the subspecialist says to the patient, "I have done all the tests I know of but I have no diagnosis. It is not this, it is not that. You have to go and find another specialist to sort out your medical complaint."

Finally, in an acute setting, to minimise medication errors, fewer medications should be prescribed. Using the NNT is the recommended way to determine which important medications are effective and therefore should not be omitted.

REFERENCES

1. Brophy JM, Bogaty P. Primary angioplasty and thrombolysis are both reasonable options in acute myocardial infarction. Ann Intern Med 2004;141:292-7.
2. Keely EC, Grines CL. Primary percutaneous coronary intervention for every patient with ST-segment elevation myocardial infarction: what stands in the way. Ann Intern Med 2004;141:298-304.
3. Demaerschalk BM. Literature-searching strategies to improve the application of evidence-based clinical practice principles to stroke care. Mayo Clin Proc 2004;79:1321-9.