

## The Hospitalist Movement – A Complex Adaptive Response to Fragmentation of Care in Hospitals

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### Abstract

The increasing complexity of healthcare is accelerating the rate of specialisation in medicine, which in turn aggravates the fragmentation of care in hospitals. The hospitalist movement advocates for the return of generalist physicians to the hospital to provide general and more holistic medical care to inpatients. This can be seen as an adaptive response to care fragmentation. Starting in the mid-1990s in North America, where the impact of healthcare complexity and fragmentation has been most widely felt, the hospital movement has gained strength and spread across the continent rapidly. This paper examines the phenomenon of the hospitalist movement in the United States, Canada and Singapore. The conclusion is that variants of the hospital movement may emerge in different parts of the world as healthcare systems adapt to common global trends that drive the increasing complexity of healthcare.

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**Key words:** Complexity, Generalist, Hospitalist

### Introduction

Healthcare systems are complex adaptive systems.<sup>1</sup> They are capable of self organisation through interacting agents that adapt to changes to the internal and external environment. About 10 years ago, an interesting care model spontaneously developed in the healthcare systems of the United States and Canada. Hospitals reacting to changes in the healthcare environment began to create teams of doctors who specialise in the general medical care of patients. Such doctors are referred to as hospitalist and the new discipline is referred to as hospital medicine.

In regions where hospitalist programmes exist, it is not uncommon to find variations which cater to local needs. Hospitalist movements have a tendency to evolve into different variants depending on the initial starting condition of healthcare systems, which are shaped by their respective history and culture. Hospitalist programmes tend to adapt to local conditions to meet needs caused by care fragmentation. The term hospitalist has different meanings and contexts in different regions. This makes definition difficult.

At the same time, there is some convergence as different healthcare systems search for solutions to common problems caused by the increasing complexity of healthcare,

dependence on technology, specialisation, ageing population and the rise in chronic complex diseases. The sum effect is that the hospital movement is a complex variation on a common theme – adaptation to care fragmentation in hospitals.

### Drivers of the Development of Hospital Medicine

The major drivers of the development of hospital medicine are: care fragmentation arising from specialisation, dependence on technology, the rise in chronic complex diseases due to ageing populations and the escalation of healthcare cost.

As complex adaptive systems, healthcare systems constantly adapt to the availability of and the distribution of resources. Healthcare systems in economically well-developed societies which allocate a vast amount of resources to tertiary care eventually reach a stage where care becomes highly compartmentalised by specialty. The rapid increase in medical knowledge and therapeutic options has long passed the point where patients can be managed by generalist physicians or surgeons in tertiary hospitals. For instance, a multiply injured patient can expect to be attended to by a swarm of highly trained doctors ranging from the emergency physician, the anaesthetist, the radiologist, the neurosurgeon, the cardiothoracic surgeon, the orthopaedic

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surgeon, the intensivist and eventually the rehabilitation physician. The development of each complication is likely to bring in even more specialised healthcare workers. Developing in tandem with this trend towards an ever greater degree of specialisation is an increasing dependence on technology. Technology and advancements in medical capabilities usher in new treatment modalities, resulting in an increase in the permutation of treatment options.

In recent decades, healthcare costs have escalated to unprecedented levels. Ineffective policies, inefficiencies of providers and commercial profiteering are the favourite culprits that we love to blame. In reality, there are many other causes that contribute to this phenomenon. A major cause of escalating healthcare costs is the advancement of medicine itself and the availability of new treatment options. Many such options are more effective and more expensive. In the past, many diseases could be diagnosed but not be treated. Nowadays, not only are we able to treat many previously untreatable diseases, but we are treating non-disease conditions such as male pattern baldness, menopause and even andropause. The consumer base for increasingly expensive healthcare resources is expanding. Better treatment has resulted in prolonged survival with a concomitant increase in prevalence and likelihood of eventual complications. All these contribute to increases in the consumption of healthcare resources and escalating costs.

Compounding everything else is an ageing population that accumulates multiple chronic diseases such as diabetes, hypertension, stroke, ischaemic heart disease, dementia and many other diseases, whose prevalence increases with age. Adding to the complexity of chronic diseases and their complications is the interaction between these diseases and their respective treatments. Medical error under such circumstances are more likely to occur, which carries additional costs in itself.

Healthcare systems across the developed world are straining to meet these challenges. The pressures of such changes are felt most acutely in tertiary hospital. It is in these hospitals that hospitalism finds fertile ground.

### Difficulties in Definition

The term “hospitalist” has been attributed to Drs Robert Wachter and Lee Goldman who first used it in 1996 to refer to physicians whose practice emphasises providing care for hospitalised patients.<sup>2</sup>

In the United States, the Society of Hospital Medicine (previously known as the National Association of Inpatient Physicians) was formed in 1997 with the aim of promoting the discipline of hospital medicine and advocacy of the work of hospitalists.<sup>3</sup> It defines hospitalists as physicians whose primary professional focus is the general medical

care of hospitalised patients. Their activities include patient care, teaching, research and leadership related to hospital medicine. Since its emergence, hospital medicine has become a significant career path for doctors trained in general internal medicine, family medicine, general paediatrics and even obstetrics.

The act of definition requires the narrowing down to specifics. However, an inclusive definition would need to take into consideration the wide variations that arise from adapting to local conditions. In the search for a definition, proponents of hospital medicine have moved towards defining it as a site-defined specialty, in contrast to an organ system-defined specialty. They draw comparison with other site-defined specialties such as emergency medicine and intensive care medicine.

The problem of such a definition lies in its contradiction to the origin and purpose of hospital medicine, which is to meet the needs of the patient in a care setting that is fragmented by specialisation. A hospitalist works like a case manager for a patient’s hospital stay, working and communicating closely with other physicians involved in the patient’s care.<sup>4</sup> Such physicians include those who are managing the patient’s problems in primary care clinics and in step-down care facilities. A patient-centred and care-centred definition would be more consistent with the aspirations and perhaps the destiny of this discipline. In the Singapore context, we would prefer to define the hospitalist as a physician who provides patient-centred general medical care, and who specialises in the co-ordination and integration of care within the hospital and with healthcare providers in the community. The hospitalist spends the majority of his time managing inpatients in the hospital. He or she spends some time managing outpatients to maintain skills and to effect care integration with the community.

The epicentre of the hospitalist movement is in North America, where a confluence of factors have created a need for an agent of care who co-ordinates the fragmented hospital care. These factors, namely: ageing population; specialisation of care; dependence on technology; escalating cost; rise of complex chronic diseases are presenting themselves in most developed countries. Many other countries are now contemplating the viability of hospitalist programmes in their healthcare system.<sup>5</sup> It is only a matter of time before healthcare systems in other countries will have to consider similar responses to care fragmentation.<sup>6</sup> It is therefore important to understand the development of the hospitalist movements in Canada and the United States of America.

### The United States Perspective

The early development of hospital medicine in the United States was driven by hospital leaders, health maintenance

organisations and medical groups searching for solutions to lower the cost of inpatient care without compromising on quality and patient satisfaction.<sup>7</sup> What started as an initiative in cost reduction rapidly gained momentum as benefits in quality improvement and physician satisfaction became apparent.<sup>8</sup>

Primary care physicians in the United States have a tradition of managing their own patients when they are admitted to hospitals. In the 1970s, the average generalist physician in the United States had about 10 patients in the hospital, each staying for an average of 8 to 10 days. The physician spent about 30% to 40% of their time taking care of such patients.<sup>9</sup> Between the 1970s and the 1990s, a transformation occurred where as medicine became increasingly complex, specialisation and dependency on technology accelerated and costs escalated. The increased cost of operating hospitals resulted in efforts to shorten the length of stay in hospital through financing by fixed payments rather than actual cost of care payments. This spurred efforts by hospitals to cut costs by reducing excess capacity, lowering the staff ratio and discontinuing non-profitable services. Profitable procedures that did not require hospital stay and had a low risk of complications were carved out and transferred to ambulatory care centres. Patients who remained in hospital now had more complex problems and were sicker than their counterpart in earlier decades. Primary care physicians began to find it difficult to maintain hospital privileges in this climate. Furthermore, reimbursements for inpatient care could not cover the opportunity cost and actual costs of providing such a service.

In the 1990s a new type of generalist physician emerged in this new environment. They practise a new model of inpatient care in hospitals that focuses on the general medical care of patients. They receive the patient from the primary care physicians who no longer provide inpatient service and co-ordinate the care that they receive from specialists in the hospital.

Ironically, the hospitalist movement was seen as a purposeful introduction of discontinuity of care between the family physician's office practice and the hospital.<sup>10</sup> This negative perception was aggravated in the early days of hospital medicine when a few managed care organisations attempted to mandate the use of hospitalists for patients who were referred to hospitals.<sup>11</sup> This alienated many physicians practising in the community who view it as a threat to their practice and an attempt to place profits before care continuity. It also gave rise to a misconception that the hospitalist movement was an invention of managed care companies.<sup>12</sup> To this day, the negative sentiments linger even though new studies have shown positive experiences of primary care physicians who use the hospitalist service.<sup>13</sup>

Notwithstanding the reservations of those who felt threatened by this new care model, hospitalist programmes proliferated, spreading rapidly throughout hospitals in the United States. Most major teaching hospitals, including the Mayo and Cleveland Clinics, Harvard University, University of California (San Francisco), University of Chicago, University of Pennsylvania and the University of Michigan have hospitalist programmes. Surveys by the American Hospital Association indicate that bigger hospitals and teaching hospitals are more likely to have hospitalist programmes. The largest managed care programmes in the United States such as Kaiser, Humana, CIGNA and United Healthcare use hospital medicine programmes in their plans.<sup>14</sup>

The number of practising hospitalists had increased correspondingly. In the mid-1990s, there were less than 1000 hospitalists in the United States. This number increased to about 13,000 by 2004 and are projected to increase to about 30,000 by 2010.<sup>15</sup>

### The Canadian Perspective

As with the United States, family physicians in Canada have traditionally continued the care of patients when they become hospitalised. Interestingly, it was also in the mid-1990s when hospitalist programmes first began to appear in the Western provinces of Canada and then spread eastwards in the country.<sup>16</sup> There are many similarities in the healthcare systems of these 2 neighbouring countries in North America. However, there are important differences, perhaps as a result of Canada's history of being part of the British Commonwealth. There are, therefore, significant differences in the hospitalist movements between the United States and Canada. In general, the advent of hospitalist programmes in Canada has been less controversial.<sup>17</sup>

While the main driver in the United States was cost containment, the over-riding concern that drives the development of hospitalist programmes in Canada is the search for a care model to cater to the growing numbers of "orphaned" inpatients.<sup>18,19</sup> Canada has a very well-developed primary care system and there is a greater emphasis on providing universal access to care. All patients are assumed to have "assigned" family physicians. When a patient is admitted without a family physician, they are considered "orphaned", "unassigned" or "unattached". A family physician may then be assigned to take care of this patient as an inpatient.<sup>20</sup> Unfortunately, more and more family physicians are relinquishing their roles in inpatient care, giving rise to a vicious cycle of an increasing number of "unattached" patients and decreasing number of family physicians who provide inpatient care. A discussion paper prepared by the College of Family Physicians of Canada reported that reasons given for family physicians'

withdrawal include the frustration of attending to numerous “orphan” patients, low remuneration for hospital work, hospital restructuring, inpatients with increasingly complex problems and feeling unwelcome in the hospital setting.<sup>21</sup> Many hospitalist programmes started with local family physicians agreeing to assume the most responsible physician status for unattached patients. The need to provide adequate compensation and to cater to diminishing numbers of available physicians eventually led hospitals to create full-time hospitalist programmes. Over time, the role of such full-time hospitalists grew to cover areas beyond catering for unattached patients.

The United States has a similar system of an “assigned” primary care doctor for inpatients and shares the same concerns.<sup>22</sup> However, the impetus for embarking on the search for a solution was different in Canada due largely to the difference in healthcare financing. A combination of differences in history and healthcare financing has resulted in major differences in the hospitalist model between the 2 countries. Another major difference is the influence of family medicine in shaping the hospitalist movement. The majority of full-time hospitalists in Canada are family physicians, whereas in the United States the majority are general internists. The differences in paradigm of these 2 disciplines will probably lead to an increasing divergence in the hospitalist movement in these 2 countries as they develop over time.

The concerns over the rise of the hospitalist movement are also different between these 2 North American countries. In the United States, the concern is mainly over the cost-effectiveness of hospitalist programmes. The Canadians, on the other hand, appear to worry more about aggravating the shortage of family physicians in the community as more of them are recruited to fill the gaps of hospital care as full-time hospitalists.<sup>23</sup> There are also concerns that the hospitalist movement is accelerating the demise of the cradle-to-grave, personal care that family medicine provided in the “good old days”. They see the hospitalist movement as a threat to the traditional values of family medicine, compartmentalising it into specialties such as hospital medicine, palliative care and other defined areas of care.<sup>24</sup> This has prompted the College of Family Physicians of Canada to call for family physician hospitalists to continue to spend time in community practice.<sup>14</sup>

### The Singaporean Perspective

Singapore’s healthcare system, like many other countries which were former colonies of the British Empire, was modelled on the British system. Divergence from the colonial system came with post-war independence. The health systems of the newly independent countries struggled to meet the needs of their new destiny defined by their

own governments with differing aspirations. However, the common theme that remained was that patient care was handed off to single-system specialists when they were admitted to hospital. Primary care physicians did not have a tradition of managing their own patients in the hospitals. There is a historical and distinct divide between hospital care and healthcare in the community. In Singapore, this divide is reinforced by the system of healthcare financing where the public sector is the major provider of hospital care and the private sector is the major provider of primary care. The public sector provides 80% of hospital care and 20% of primary care.<sup>25</sup> This difference in the allocation of public funds to healthcare has resulted in a separation of primary care and hospital care, hampering efforts to improve care continuity and system integration.

Singapore’s hospitals, like many tertiary hospitals in the urban centres of developed countries, are experiencing rapid growth in the number of specialist and subspecialist departments. This has resulted in care fragmentation and compromised the general medical care of patients.<sup>26</sup> Traditionally, general internists and general surgeons have been the single system specialists who received the hand off of care from the primary care doctors through the emergency departments. With increasing specialisation, the ranks of such generalists are fast dwindling to a point where it will soon become unsustainable. The role of the generalist in the hospital is now belatedly recognised, but the system cannot reverse the trend of subspecialisation.<sup>27</sup> The hospitalist care model is seen as a potential solution to this problem of care compartmentalisation within hospitals.<sup>26,28</sup>

Adopting the Canadian model, where hospitalist programmes are staffed by family physicians, is an attractive proposition as it can potentially help to bridge the gap between hospital and primary care.<sup>27</sup> Unlike in Canada, where there are concerns about a shortage of family physicians in the community, Singapore have a relative excess of family physicians in the community. While other areas of the healthcare system are experiencing incessant complaints of long waiting times and manpower shortages, private sector primary care clinics are complaining of falling attendance and too many doctors. It would appear, then, that there would be no downside to adapting the Canadian model of hospitalist programmes to the Singapore context.

In anticipation of the relentless specialisation and continuing fragmentation of healthcare, it is not surprising that the largest tertiary hospital in Singapore was the first to attempt the development of such a care model. A clinical family medicine department was established in the Singapore General Hospital in May 2006 with the intention of developing a local adaptation of the hospitalist care

model.<sup>29</sup> The hospitalist movement is seen as a useful adaptive response to remedy care fragmentation through care co-ordination and integration. The objective is to provide a safer, more cost-effective and patient-centred care for patients as they journey through the hospital system. The pace of development is anticipated to be slow as the urgency of the problem is still not widely apparent. Unlike the North American systems, the Singapore healthcare system does not have any form of “assignment” of patients to primary care physicians. Truncation of care when the patients transit from primary care to the hospital is a peculiar tradition that has surprisingly been accepted as the norm. This removes the sentinel signal to the system which warns of critical care discontinuity caused by the fragmentation of hospital care. Furthermore, barriers to care co-ordination and integration are deeply entrenched by the organisational culture shaped by decades of tradition. Healthcare provider organisations and even departments within hospitals are not structured to work co-operatively. They compete for resources as healthcare financing rewards working in silos and managing complex health problems in discrete compartments and defined sectors.

The Singapore healthcare system is known for its forward thinking character. The challenge of care fragmentation has triggered a search for solutions through care integration and co-ordination. Hospitalist programmes provide an attractive solution to the problem of care fragmentation within the hospital. Family physician hospitalist programmes offer a potential additional benefit of forging a missing link between primary care and hospitals. The challenges of re-tooling through physician training, re-alignment of corporate culture, re-organisation of care provider relationships and healthcare financing are formidable. The effectiveness of hospitalist programmes in reducing costs and improving care continuity remains controversial. The future will probably see the development of a local variant of the hospitalist movement that is significantly different from the current form in Canada and the United States. In the Singapore context, hospitalists’ work will have to include integrating care between the hospital and the community.

### Conclusion

The confluence of trends in modern medicine which include an ageing population, the rise of chronic diseases, the dependence on technology, the complexity of healthcare, the escalating costs and the fragmentation of care through specialisation has created massive disequilibrium among hospital-based healthcare systems in developed countries. Specialisation of care together with maladaptive behaviour aimed at improving the operational and financial efficiency of hospitals through the relentless pursuit of outcome measures, such as shorter hospital stays, have accelerated the depersonalisation of care and weakened institutional

socialisation.<sup>30</sup> Besides care fragmentation, communications between teams of specialists are often lacking with little co-ordination between different teams of doctors caring for the same patient. Dangerous situations akin to the right hand not knowing what the left hand is doing often arise, thus raising concerns about patient safety. Behaving like complex adaptive systems, different variants of hospitalist programmes have emerged as adaptive responses to the tectonic changes confronting healthcare systems around the world. The hospitalist movement is a significant phase in the continuing evolution of hospitals throughout the ages. It is a movement that brings patient-centredness back into focus amidst the pandemonium of rushing the patient through ever shortening lengths of stay for more and increasingly complicated health problems. The hospital movement is emerging as a self-organising response of healthcare systems as they adapt to the new trends that are shaping healthcare around the world.

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