

A Short Reflection on the Practice of Clinical Medicine

Zhineng J. Yang, MD, Department of Medicine, University of Pittsburgh Medical Center
Hunter R. Cape, MD, Department of Surgery, University of Toronto

Abstract

Advances in diagnostic and therapeutic modalities in the field of Medicine have led to changes in both diagnostic and therapeutic approaches that are supported by evidence-based practices. It is anticipated that these resources will become more readily accessible in the near future. For instance, the utilization of information technology with the systematic introduction of the Electronic Medical Record (EMR) has contributed to a progressive transition of health-care documentation from the traditional paper-based charts to that of electronic documentation. Beyond medicine and its associated processes, social and cultural changes also mean that patients today have different expectations with regards to their role, and the corresponding role of their physicians than they did in the past. When these two aspects are taken together, it becomes clear that physicians today are exposed to new challenges. This article serves to highlight and to provide a timely discussion of the emerging issues related to the practice of clinical medicine and the rendering of patient care that is relevant to today's medical practice.

Introduction

Within the medical tradition, physicians are responsible for self-regulation, guidance, continued training, and for setting the pace of and mood for tomorrow's medical practice. Furthermore, to remain relevant, the practice of medicine has to adapt and improvise to meet the needs of modern society. Effective delivery of healthcare depends on how current issues in clinical practice are being addressed, the resiliency of the medical profession to improve the current standard of practice, and the medical profession's ability to make relevant changes.

Corresponding Authors:
Hunter Cape
Email: hunter.cape@mail.utoronto.ca

The medical landscape has changed considerably over the past century. Propagated by technological advances, the boundaries of medicine continue to advance at an exceptional rate, whether in the areas of screening, diagnostic, or therapeutic modalities. Central themes to the delivery of contemporary medicine include the evolution of the doctor-patient relationship from a paternalistic physician-centered model to a patient-centered model, which is structured around a Multidisciplinary Team (MDT) approach. Furthermore, with the advent of the Electronic Medical Record (EMR) and the wealth of information available through investigatory and diagnostic testing, the resources to deliver an exceptional standard of care are clearly available.

However, with increasing access to new resources comes a responsibility to use them appropriately and in a manner that is both acceptable to society as a whole and appropriate given the economic climate. This article will serve to highlight the issues of such developments and aim to underline some of their associated pitfalls.

Multidisciplinary Team vs. Independent Practice

The escalating knowledge base in medicine has given way to increased specialization and sub-specialization throughout all fields. Coupled with an aging population, often with multi-organ illnesses, it is not unusual for patients to be managed by multiple physicians, each looking after a specific system. The days where one primary physician manages most of a patient's medical issues are quickly being replaced by consultative medicine involving multiple inputs from subspecialty colleagues. This includes allied health professionals such as dietitians, nurse practitioners, physical therapists, case managers, and social workers.

The MDT approach has been shown to be valuable in certain settings. For example, Landefeld et al. found in a randomized control trial that by using the MDT approach to apply principles of quality improvement and comprehensive geriatric assessment to develop a new system of care for acutely ill elderly patients, they were able to improve the ability of this patient population to perform basic activities of daily living at the time of discharge as well as reduce the frequency of discharge to institutions for long-term care.¹ Likewise, published data by Cohen et al. supports the utility of the MDT approach in the geriatric setting, and suggests that there is also benefit when used in the outpatient setting.² Another obvious benefit of the MDT approach has been in the field of oncology whereby increasing specialization and complexity of cases is routinely shared across the fields of medical oncology, surgical oncology, radiology, and pathology.^{3,4} A literature review

conducted by Wright et al. concluded that multidisciplinary care in the setting of oncology has been shown to improve patient outcomes and has been accepted at the international level as the standard of cancer center care.⁵

Although the MDT approach has documented successes in certain areas, critics cite the substantial amount of health-care issues with team dynamics, the increased need for administrative support and additional funding, as well as a paucity of evidence in certain fields to support its widespread use.⁶ It can also be argued that a culture of excessive consultation may result in inappropriate resource utilization in less complex cases, thereby leading to unnecessary healthcare expenditure with minimal return of benefit. Moreover, when subspecialty physicians fail to communicate effectively, consultative medicine may lose sight of the 'big picture' view for the patient.

Ultimately, the success of consultative medicine hinges upon how effectively physicians are at discussing management on a macroscopic level as opposed to concentrating on individual systems. The role of the responsible physician not only entails managing issues within their scope of practice, but also in serving as the central coordinator of care. This physician balances the recommendations made by other consultants while also ensuring that participating colleagues remain cognizant of treatment goals that are crucial in decision-making.

Changing Roles: Paternalism vs. Partnership

Until the mid twentieth century, the delivery of medical care relied heavily on a model of benevolent paternalism, whereby the patient's role was to trust and to follow the doctor's recommendations. In this model, the patient interview, and in essence, the relationship formed between the doctor and patient, was the primary element that led to the diagnosis and guided the management of disease. Over time, as the relationship between physician and patient developed, a trust formed and care was dispensed in a manner believed to be in the best interest of the patient.⁷

Since the end of World War II, the care of the sick has shifted from a paternalistic relationship to a patient-centered model that puts the principle of autonomy and shared decision-making at the forefront. The major influences driving this shift are the rapid scientific progression of the medical industrial complex, coupled with the increasing education and sophistication of the general population through accessibility to information resources. Through the Internet and public media, the general public is better informed, more aware of uncertainties with regards to the various decision-making algorithms within medicine, and more skeptical of expert opinion.⁸

With increasing public awareness, it is not uncommon for patients to visit their physician with their own initial assessment and plan in mind, including requests for specific diagnostic tests, medications, and treatments. While this behavior can represent a patient who is pro-active in their healthcare, some of the patient's suggestions for treatment may not be the in the best interest of the patient or the medical system. Although there is a myriad of information accessible in the public domain, there remains genuine concern regarding the quality and accuracy of available information, and the ability

of patients to synthesize and interpret it. With this in mind, physicians should work to develop a partnership with patients and to help them navigate the complex medical domain. It is critical for physicians to keep patients on an appropriate and safe course by avoiding unnecessary procedures and/or inappropriate treatment.

Central to creating an effective partnership is the importance of good physician-patient communication. Good communication has been linked to improved understanding, higher patient satisfaction, greater treatment compliance, better patient health outcomes, and reduced anxiety and malpractice claims.⁹ Therefore, the value of this therapeutic alliance afforded by establishing rapport is not to be underestimated.

Ambulatory vs. Inpatient Care

Ambulatory medicine has taken on an increasingly important role in healthcare delivery. It operates on the fundamental concept of preventative medicine, whereby pre-emptive strategies and/or early interventions are employed to facilitate early detection of disease, and guard against acute disease exacerbation and progression. Through these principles, ambulatory medicine has an important role in reducing hospital admission and length of stay which, in turn, translates into fewer exposures to hospital-acquired infections for any given patient and a reduction in hospitalization-related healthcare expenditure.^{10,11}

Recently, many procedural specialties have also adopted this concept of outpatient-based delivery of medical care, and there has been an increasing trend towards outpatient, day case procedures. Examples include the percutaneous coronary intervention and the laparoscopic cholecystectomy, both of which are now often followed by same-day discharges.¹²⁻¹⁴ Driving these trends is the increasing realization that patients need not always benefit from hospitalization and that similar, if not superior, outcomes may be achieved with close follow-up in the community.

While there are tangible benefits for outpatient care, the way in which ambulatory medicine is practiced has posed important questions to patient care. One of the largest concerns involves the lapses in follow-up of test results that can compromise patient safety.^{15, 16} Unlike inpatient medicine where physicians enjoy the benefit of having their patients' clinical status and results constantly monitored by health professionals, the nature of outpatient practice does not lend itself to this luxury.

Improvement of patient care in the ambulatory setting is continually assessed and perfected with new policies and system practices in place. However, it is likely that results can be optimized with MDT care involving the delegation of roles to nurses, nutritionists, social workers, and home/outpatient therapists. In this setting, the physician is the central coordinator of care. Since ambulatory care is anticipated to occupy a greater role in the future, it is crucial that healthcare professionals be adept in its execution. Moreover, physician-led quality improvement projects can be useful in optimizing system processes. For example, the EMR can be further adapted to improve safety and to streamline workflow. One such adap-

tation would be to configure the EMR to send out email alerts in the event of critical laboratory or imaging abnormalities, thereby serving as a redundancy mechanism against oversights. The utilization of electronically based automatic aids to provide timely information delivery to relevant providers of care is likely to be beneficial in the various ambulatory settings.

Bedside vs. Data Interpretation

One of the single greatest challenges faced by physicians today and in the future is to utilize technological innovations in an advantageous way without allowing them to dictate the fundamentals of medical practice. One prominent improvement facilitated by today's technology is the EMR, a tool that is readily employed in North America and is likely to be increasingly adopted throughout the world in the near future. This system allows physicians to coordinate and interpret a range of orders including laboratory tests, radiology, and interventional procedures. Furthermore, when used in combination with Computerized Provider Order Entry (CPOE), information technology can and is being used to develop Computerized Clinical Decision Support (CCDS) models. These models enable physicians to access a broad range evidence-based guidelines in order to enhance decision-making, which may result in a safer and higher standard of care. Moreover, the continuous flow of information across these interfaces allows the healthcare industry to determine where the strengths and weaknesses of current data lie in order to more efficiently guide resources for future research.¹⁷

Physicians are now spending more time than ever staring at the computer screen, interpreting data, typing order entries, and creating new notes on patients (citation?). While the great utility of these resources has been argued above, physicians are now spending less time at the bedside talking to and examining patients. Should this trend be left unchecked, there is the risk that this technology will act as a barrier between the physician and patients communication, or that physicians will treat patients based on numbers and images interpreted on the computer screen. It is critical for these risks to be acknowledged. Physician-patient interaction is a powerful tool and its diagnostic and therapeutic value should not to be underestimated. More often than not, a working diagnosis can be obtained from a thorough history and physical exam. Ideally, further investigations should be based on a relatively high pretest probability garnered by an informative history and examination. Further testing should serve to confirm suspicion and to rule out other probable pertinent causes when arriving at a diagnosis. Although rudimentary when compared to contemporary imaging modalities, when further investigations remain inconclusive, there is often a high diagnostic yield in returning to the bedside to 'consult' with the patient to fill missing gaps. In addition to being an important source of diagnostic information, physician-patient interaction can have therapeutic value. Through this interaction, physicians can address patient concerns, establish trust and rapport, and put patients at ease.

Patient satisfaction is closely linked to the doctor-patient relationship and has a proportional impact on medical adherence.¹⁸⁻²⁶ Bedside medicine is a skill that comes with experience that can be honed by spending time talking to and examining patients. Overall, it is prudent to interpret data in the context of the given history and examination. The focus should be to treat the patient as a whole rather than the values on the screen.

Focused testing vs. 'Knee-jerk' Reflex Testing

Physicians today have the luxury of a wide selection of tests and investigations available at their disposal. However with this abundance of resources comes a duty to adopt a habit of selecting investigations appropriately. What differentiates a physician from the general public is a knowledge base yielding the ability to select tests relevant to the context of the patient's presentation. The temptation of over-testing is a challenge that needs to be overcome. Physicians should strive to perform selective testing as guided by pretest probability gathered from a pertinent history and physical examination. One consequence of excessive testing is the issue of unnecessary healthcare expenditure and increased overall costs. Another drawback is the increase in incidental findings, which can make it difficult for providers to know how best to move forward and which can lead to further unnecessary investigations and interventions.²⁷ On the other hand, being overly conservative and denying access to useful tests developed on the back of medical advances is hardly appropriate.

Current practice trends seem to suggest physicians are being overly liberal in diagnostic utilization (citation). Before adequately addressing this issue, the relationship between reflexive testing and the current medico-legal climate with regard to malpractice must be examined. The fear of litigation due to missing sinister diseases has led to the practice of 'defensive medicine', which often entails unwarranted investigations. There is currently no disincentive to reflexive testing. The topic of inappropriate workup remains hotly debated and represents a relevant challenge requiring attention. Ultimately, it important to highlight that rational medicine does not equate to medical rationing.

Conclusion

This article will have served its purpose should it provoke self-reflection on the contemporary and future state of medical practice. While physicians continue to be enchanted by the intricacies of medical science, let us not forget to contemplate the state of medicine. How contemporary medicine moves forward will depend on how well best practices from the past are retained and integrated into those of the future.

Acknowledgements

The authors would like to thank Avery Nathens MD, PhD, MPH, FRCS, FACS, and Marguerite Carter MD, for their critical feedback on this work.

References

- Landefeld CS, Palmer RM, Kresevic DM, Fortinsky RH, Kowal J. A randomized trial of care in a hospital medical unit especially designed to improve the functional outcomes of acutely ill older patients. *N Engl J Med.* 1995;332:1338-1344.
- Cohen HJ, Feussner JR, Weinberger M, Carnes M, Hamdy RC, Hsieh F, Phibbs C, Courtney D, Lyles KW, May C, McMurtry C, Pennypacker L, et al. A controlled trial of inpatient and outpatient geriatric evaluation and management. *N Engl J Med.* 2002;346:905-912.
- Blazeby JM, Wilson L, Metcalfe C, Nicklin J, English R, Donovan JL. Analysis of clinical decision-making in multi-disciplinary cancer teams. *Ann Oncol.* 2006;17:457-460.
- Newman EA, Guest AB, Helvie MA, Roubidoux MA, Chang AE, Kleer CG, Diehl KM, Cimmino VM, Pierce L, Hayes D, Newman LA, Sabel MS. Changes in surgical management resulting from case review at a breast cancer multidisciplinary tumor board. *Cancer.* 2006;107:2346-2351.
- Wright FC, De Vito C, Langer B, Hunter A. Multidisciplinary cancer conferences: a systematic review and development of practice standards. *Eur J Cancer.* 2007;43:1002-1010.
- Fleissig A, Jenkins V, Catt S, Fallowfield L. Multidisciplinary teams in cancer care: are they effective in the UK? *Lancet Oncol.* 2006;7:935-943.
- Chaitin E, Stiller R, Jacobs S, Hershl J, Grogen T, Weinberg J. Physician-patient relationship in the intensive care unit: erosion of the sacred trust? *Crit Care Med.* 2003;31(3 Suppl): S67-S72.
- Stevenson F, Scambler G. The relationship between medicine and the public: the challenge of concordance. *Health (London).* 2005;9:5-21.
- Kissane DW, Bylund CL, Banerjee SC, Bialer PA, Levin TT, Maloney EK, D'Agostino TA. Communication skills training for oncology professionals. *J Clin Oncol.* 2012;30:1242-1247.
- Lingarajnam S, Worth LJ, Slavin MA, Bennett CA, Kirsas SW, Seymour JF, Dalton A, Koczwarra B, Prince HM, O'Reilly M, Mileskin L, Szer J, et al. A cost analysis of febrile neutropenia management in Australia: ambulatory v. in-hospital treatment. *Aust Health Rev.* 2011;35:491-500.
- Sheridan A, Howell F, Bedford D. Hospitalisations and costs relating to ambulatory care sensitive conditions in Ireland. *Ir J Med Sci.* 2012 [Epub ahead of print].
- Bertrand OF, Larose E, De Larochelliere R, Proulx G, Nguyen CM, Dery JP, Gleeton O, Barbeau G, Noel B, Rouleau J, Boudreault JR, Roy L, et al. Outpatient percutaneous coronary intervention: Ready for prime time? *Can J Cardiol.* 2007;23(B Suppl):S58-S66.
- Ahn Y, Woods J, Connor S. A systematic review of interventions to facilitate ambulatory laparoscopic cholecystectomy. *HPB (Oxford)* 2011;13:677-686.
- Calland JF, Tanaka K, Foley E, Bovbjerg VE, Markey DW, Blome S, Minasi JS, Hanks JB, Moore MM, Young JS, Jones RS, Schirmer BD, et al. Outpatient laparoscopic cholecystectomy: patient outcomes after implementation of a clinical pathway. *Ann Surg.* 2001;233:704-715.
- Callen JL, Westbrook JL, Georgiou A, Li J. Failure to Follow-Up Test Results for Ambulatory Patients: A Systematic Review. *J Gen Intern Med.* 2012;27:1334-1348.
- Wynia MK, Classen DC. Improving ambulatory patient safety: learning from the last decade, moving ahead in the next. *JAMA.* 2011;306:2504-2505.
- Sucher JF, Moore FA, Todd SR, Sailors RM, McKinley BA. Computerized clinical decision support: a technology to implement and validate evidence based guidelines. *J Trauma.* 2008;64:520-537.
- Francis V, Korsch BM, Morris MJ. Gaps in doctor-patient communication. Patients' response to medical advice. *N Engl J Med.* 1969;280:535-540.
- Kinney J, Bradshaw P, Ley P. Patients' satisfaction and reported acceptance of advice in general practice. *J R Coll Gen Pract.* 1975;25:558-566.
- Linn MW, Linn BS, Stein SR. Satisfaction with ambulatory care and compliance in older patients. *Med Care.* 1982;20:606-614.
- Wartman SA, Morlock LL, Malitz FE, Palm EA. Patient understanding and satisfaction as predictors of compliance. *Med Care.* 1983;21:886-891.
- Hulka BS, Cassel JC, Kupper LL, Burdette JA. Communication, compliance, and concordance between physicians and patients with prescribed medications. *Am J Public Health.* 1976;66:847-853.
- Ware JE, Jr, Wright WR, Snyder MK, Chu GC. Consumer perceptions of health care services: implications for academic medicine. *J Med Educ.* 1975;50:839-848.
- Berkanovic E, Marcus AC. Satisfaction with health services: some policy implications. *Med Care.* 1976;14:873-879.
- Roghamann KJ, Hengst A, Zastowny TR. Satisfaction with medical care: its measurement and relation to utilization. *Med Care.* 1979;17:461-479.
- Thomas JW, Penchansky R. Relating satisfaction with access to utilization of services. *Med Care.* 1984;22:553-568.
- Deyo RA. Cascade effects of medical technology. *Annu Rev Public Health.* 2002;23:23-44.

Medical Alumni Association

UNIVERSITY OF TORONTO

Membership includes all the graduates of the under-graduate MD programme – approximately 12,000. The Medical Alumni Association provides a link between the graduates, their medical school and their university.

- The mandate of the Association is to preserve and enhance the educational experience of the medical student body of the Faculty of Medicine through:
 - Student loan program
 - Scholarships, bursaries, awards and prizes
 - Travel grants
 - Medical Society support
 - Other student events and productions
- Medical Class reunions are assisted by our administrative staff
- The Medical Alumni Association liaises with the Faculty of Medicine and the University of Toronto

Medical Alumni Association
Room 3249
1 King's College Circle
Toronto, ON
M5S 1A8

President
Dr. Peter Kopplin

Vice-President
Dr. Alexandra Berezowskyj

Administrator/Manager
S. Ruth Gillings

Administrative Assistant
Andrea Santos

Tel: 416-978-0990 or 416-978-0991
 Fax: 416-978-0959
 Email: medical.alumni@utoronto.ca
 Website: <http://www.maautoronto.ca>