


The Role of “Special Clinics” in Imparting Clinical Skills: Medical Education for Competence and Sophistication

Sunil Jain ¹

Rebecca S Dewey ²

¹Department of Paediatrics, Command Hospital (Northern Command), Jammu and Kashmir, India; ²Neuroimaging, Faculty of Science, University of Nottingham, Nottingham, NG1 5DU, UK

→ Video Abstract



Point your SmartPhone at the code above. If you have a QR code reader the video abstract will appear. Or use:
<https://youtu.be/ZM-TLIS02rQ>

Purpose: Advanced methodical learning and optimised learning leads to better-trained doctors. Such teaching typically comprises the illustration of features and access to facilities. This article explores the role of “Special clinics” in medical education. The role of sophisticated “Special clinics” is to provide vigour and vibrancy in treating and teaching as well as advancing the art and science of medicine. All this contributes towards the current evidence indicating benefits of reducing hospitalization.

Methods: This article comprises an analysis of the guidance produced by leading medical education institutions. Findings are presented in the perspective of a relevant theoretical framework around “Special clinics”, in light of the available evidence and personal experience.

Results: The implementation and potential impacts of “Special clinics” are presented within the context of the “4SAs”, a favoured teaching mnemonic: 1) Scientific Approach: medical education rules and regulations reflecting scientific reasoning in support of “Special clinics”, 2) Setting Advantages: the mechanisms by which “Special clinics” are conducive to and contribute towards increasing the capacity to comprehensively treat complex disorders in the outpatient setting, avoiding hospitalization and its associated risks, as well as expenditure, 3) Sophistication Advantages: tools and techniques to ensure advanced clinical skills teaching including novel outpatient technologies, understanding the need for focussed study and practice, and exploiting the advantages of internationalization of medical education, and 4) Successes and Advancements: opportunities to observe experts providing specialist care of the highest standard. The use of a focussed approach aims to explore and advance frontiers of medical education.

Conclusion: “Special clinics” will soon form a major component of the hospital workload and play a crucial role in medical education. They provide the advantage of condition-specific patient-centered care, the motivation for excellence. Clinical skills learnt by medical students in “Special clinics” will undoubtedly contribute to long-term improvements in the medical care.

Keywords: medical education, competency, outpatient clinics, communication skills, case-based learning, patient-centered care

Correspondence: Sunil Jain
Department of Paediatrics, Command Hospital (Northern Command), Pin 901131, c/o 56 APO, Jammu and Kashmir, India
Tel +91 9086068677
Email sunil_jain700@rediff.com

Plain Language Summary

“Special Clinics” represent a promising emerging trend for the treatment of a variety of conditions, and simultaneously providing for education and research.

We are exploring use of “Special Clinics” for methodical learning and maximizing the opportunities for teaching and training medical professionals, including continuing professional development.



A review of the current evidence reveals advantages in reducing frequency and duration of hospital stays by treating more comprehensively in the outpatient setting, including patients with complex disorders. This consequently has cost advantages as well as reducing the adverse side-effects of hospital stays.

Evidence is drawn from the establishment of an Asthma clinic in a teaching hospital, run by specialists and postgraduate students, which led to the significant beneficial results of reduced hospital stay, emergency visits, and addressing the treatment needs of children (DOI: 10.32677/IJCH.2017.v04.i02.014 and <https://youtu.be/a2oHQWXGegU>). The success of the model inspires application to other scenarios and settings.

“Special clinics” will take over part of the hospital workload alongside 1) availability of new technology in the outpatient setting, such as imaging, 2) minimally invasive surgical procedures, and 3) evidence that outcomes are improved by reducing hospital stay.

Examples of “Special clinics” include Epilepsy clinics, Diabetes clinics, Pain clinics, Leg ulcer/tissue viability clinics, Immune-deficiencies clinics, and Child and adolescent surgical breast clinics.

“Special clinics” facilitate faculty members in simultaneously treating and teaching and training junior doctors and students.

Establishing “Special clinics” in teaching institutions and communities managed by faculties will be rewarding with expected improvements in quality of teaching and continuous professional development.

Introduction

A clinic, according to Encyclopedia Britannica is “an organized medical service offering diagnostic, therapeutic, or preventive outpatient services”. Currently, focused treatment of a specific set or sub-set of health conditions by Specialists & Super/Sub specialists in “Special Clinics” is becoming common, and this trend must be explored in the context of the Medical education framework. One of the definitions of a ‘clinic’ from the Oxford Advanced American Dictionary is “an occasion in a hospital when medical students learn by watching a specialist examine and treat patients”. The treatment of several patients of one particular type presents an opportunity for learning, repetition being the “mother of learning”, while also facilitating an analysis of the intricacies of the technique and an opportunity to actively elaborate on components of the technique beyond watching.

Methodical learning and optimized learning lead to more highly skilled doctors. To achieve this aim, the teaching of doctors should be centered on exploring clinical symptoms and signs, both subtle and overt,

differentiating degrees of severity, individualizing investigations and treatment, counseling, and comforting. This article proposes a method of learning whereby these activities are conducted in Specialty/Specialist clinics. “Special clinics” are an emerging trend for the improvement of treatment approaches to a variety of diseases, providing a vibrant, innovative, and cohesive model combining education, research, and health care services. Published evidence has demonstrated that establishing an asthma clinic in a teaching institution managed by faculty and postgraduate students, taking a progressive approach to instilling expertise has led to significant beneficial outcomes.¹

The implementation of these teaching methods is expected to improve treatment outcomes, capitalize on early intervention, focus on arresting the disease progress, limit the impact of disability, and improve functionality. Special clinics are proposed as an activity of teaching institutions, both in the hospital and the community.

Good clinical training is crucial for the delivery of high-quality medical care. All aspects of the training site impact the quality of the training residents receive. The experiences of residents during their training further influence their capabilities, the clinical decisions they make, and the care they provide.² As such, it is important that teaching occurs in institutions of excellence. “Special clinics” are proposed to be able to contribute towards these goals and enhance the quality of clinical training provided. Consequently, this article reviews the implementation of “Special clinics” whereby trainee clinicians are supervised by a faculty of clinical teaching staff.

The Scientific Approach

Rules and regulations reflect the scientific reasoning behind teaching aims and outcomes. The Medical Council of India (MCI) states:

The graduate medical education in clinical subjects should be based primarily on out-patient teaching, emergency departments and within the community including peripheral health care institutions. The out-patient departments should be suitably planned to provide training to graduates in small groups.³

“Special clinics” functioning on a daily or weekly basis in teaching institutions or peripheral healthcare centers are well-positioned to provide valuable clinical experience to the graduates. Allocation of students to specific clinic days can be guided by workload and location and also dictated

by the teaching capacity within the institution and the healthcare needs of the community.

The United Kingdom General Medical Council (GMC) standards for medical education and training at the undergraduate level stipulates that:

School curricula must give medical students experience in a range of specialties, in different settings, with the diversity of patient groups that they would see when working as a doctor.

The GMC recommends that postgraduate training programs must give provide sufficient practical experience to achieve and maintain the necessary clinical or medical competencies.⁴ Exposure from “Special clinics” can provide these opportunities in a systematic and focused manner while ensuring the delivery of high-quality clinical care in a sophisticated multidisciplinary program.

At a postgraduate level, the MCI regulations for Speciality & Super-Speciality courses state:

Besides the general outpatient services, Speciality Clinics shall also be available for the training of postgraduate students in the relevant broad and super speciality.

Further, it emphasizes that “A modular approach to the course curriculum is essential for achieving a systematic exposure to the various sub-specialities concerned with a discipline”. The ultimate goal of these regulations is the cohort of trainees -

Mastering most of the competencies, pertaining to the speciality, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.⁵

Enhancing the acquisition of expertise through providing “Special clinics” will likely improve the standards at which quaternary levels of healthcare are delivered. In short, the application of scientific reasoning to the design of teaching will undoubtedly improve clinical practice.

The Setting Advantages

The hospital environment has experienced major changes over the last few decades. Emergency departments and critical care units have evolved to manage critically ill patients with good results. Even patients with conditions that would previously have proven fatal are surviving in greater and greater numbers. In parallel, there is an increasing requirement to reduce the length of hospital stays and where possible to deal more comprehensively

with complex disorders in the outpatient setting.⁶ This is where “Special clinics” provide an interesting new angle.

“Special clinics” can play an increasingly important role with 1) the availability of new technologies in the outpatient setting, such as imaging and percutaneous infusion catheters for long-term antibiotics or nutrition, 2) the feasibility of minimally invasive surgical procedures, and 3) the emergence of recent evidence that outcomes often are improved by reducing inpatient hospitalization. “Special clinics” are proposed as a measure to cover part of the hospital workload and simultaneously play important role in medical education.

Properly functioning “Special clinics” have been demonstrated to decrease the need for hospitalization as well as emergency visits.¹ “Special clinics” provide dedicated comprehensive gold-standard advice and treatment which is both specific and holistic. Prevention advice and health education provided in combination with expert management also often results in decreased requirements for medication, for example, many patients experiencing the stepping down of treatment in an asthma clinic.¹

It has been observed that -

While the graduates generally possess reasonably sound knowledge of medical science, they are often found deficient in the performance of clinical skills and problem-solving, which form the core of clinical competence.^{7,8}

Focused training in “Special clinics” are likely to be able to address this issue. Clinical problem-solving ability is often taught using a strategy known as case-based learning (CBL). There is evidence from the area of medical oncology that CBL is more effective at improving the problem-solving ability of graduate students than traditional teaching methods.⁹ “Special clinics” provide opportunities for CBL across the complete spectrum of care.

There has been a disturbing trend towards “Clinical skills units” using models, simulators, and mannequins. They are assumed to be advantageous because:

Students and doctors can practice and acquire technical and examination skills in a standardised and protected environment without being concerned about the distress such learning may cause real patients.¹⁰

However, this approach does not allow students to practice the art of comforting the patient, or to build the skill of a 'bedside manner'. The bedside manner is an essential medical skill, which needs to be taught, practiced, and perfected. Real-life situations are most effective

at giving trainees the chance to hone this skill, as they are provided with immediate feedback that is not easy to predict, and they learn that every action has immediate real-life consequences.

The limitations of using patient simulation methods for training basic and advanced clinical skills are the lack of any clinical realism.¹¹ “Special clinics” will offer trainees the experience of tackling clinical conditions first-hand, and boosting the confidence required for real-life situations. Any deviation from this approach will limit the use of the skills acquired. It has been reported that “Patients can also play a role, not only as passive teaching material, but also as teachers and assessors”.¹² Simulations should be regarded as a complementary tool but should not replace bedside teaching.^{13,14} The GMC advocate a phased approach for the teaching of both undergraduates and postgraduates, including the use of:

Technology enhanced learning opportunities, with the support of trainers, for developing clinical, medical and practical skills and generic professional capabilities

before using one’s skills in a clinical situation.⁴

“Special clinics” facilitate the intricate and systematic study of a particular medical speciality. In this way, knowledge gaps can be identified and progressive improvements can be made. Tangible evaluation leads to the production of useful evidence,¹⁵ and targeted exploration using thorough and systematic examination is necessary for advancing the arts, skills, and sciences. Establishing “Special clinics” in teaching institutions and communities managed, by teaching faculties is likely to result in significant rewards and constitute an important step in teaching the principles of care, comfort, and cure for all.

The Sophistication Advantages

To impart all the necessary skills to trainee doctors requires talented teaching staff, together with much study and practice to achieve competency. The most credible medical textbooks state:

- 1) A great deal of knowledge and skill is required to practise as a doctor¹⁶
- 2) Although the skills of physical diagnosis are acquired with experience, it is not merely technique that determines success in identifying signs of disease but a mind alert to those findings.⁶

As such, “Special clinics” that provide teaching and opportunity for repeated skills practice and instill trainees with the much needed experience, should be not merely the desirable level of training quality, but the norm.

Conventional “Special clinics” include specialties such as asthma clinics, epilepsy clinics, diabetes clinics, obesity clinics, and pain clinics. Newer specialties to add to this list include leg ulcer/tissue viability clinics, trial without catheter clinics, and falls clinics, to name but a few examples, where specialist equipment and multidisciplinary teams are necessary.¹⁷ Further, specialist clinics such as primary immunodeficiencies clinics, pediatric and adolescent surgical breast clinics, neurological HIV clinics, gerontorheumatology clinics, and many more are likely to emerge in the near future based on extensive recent progress in medical knowledge and the emergence of novel sub-specialties.^{18–21} Medical education utilizing the concept of the “Special clinic” is likely to become progressively more abundant and effective as the evidence base builds up around it.

As the structure of medical science progresses towards specialization, super-specialization, and sub-specialization, “Special clinics” will become more useful and necessary. The existence of a “Special clinic”, at a given teaching hospital will foster its own reputation, build upon the experience of a large number of cases, and contribute to research findings, providing an excellent learning opportunity for students globally. Universities are increasingly organizing international exchange programs in response to the growing globalization in the field of healthcare.²² Global health provides the advantage of being able to examine specific problems in a particular light in order to improve understanding of barriers to prevention, diagnosis, and care as well as working towards finding a means of overcoming them.²³ “Special clinics” significantly contribute to these efforts.

Furthering medical science requires amassing extensive knowledge and the experiences of many patients. Teaching that utilizes these resources is therefore highly rewarding, and leads to improvements in the process. A study of a specialized outpatient clinic within the department of Plastic and Aesthetic Surgery of a university teaching hospital prompted the following comment:

The setting of complex as well as a broad spectrum of diseases of the university outpatient clinic is particularly

suitable for teaching of differential diagnoses, diagnostic algorithms & development of treatment strategies.²⁴

Communication problems in healthcare can arise when doctors focus on disease management, rather than on the patient, their life and their health. Interventions to promote patient-centered care during clinical consultations are effective in imparting patient-centered skills on trainees.²⁵ “Special clinics” facilitate the teaching of focused communication skills, and are more effective in this role than in the inpatient setting where the focus is largely on disease management due to the assumed increased severity of the patient’s condition thus requiring hospitalization.

In association with Israel joining the World Health Organization Network of Health Promoting Hospitals, their teaching hospitals, community pediatric clinics, and gynecological clinics adopted the “Ask Me 3” initiative. The initiative encourages patients to ask three questions: What is my health problem or condition? What am I to do about it? Why is it important? Similarly, some healthcare providers have also implemented teach-back or show-me methods, whereby a patient is asked to teach the information they have been given back to the healthcare professional to confirm that they have fully understood it.²⁶ Such communication confirmation methods are befitting of being practiced and perfected in “Special clinics”.

Expertise in medical sciences is to a large extent developed through experience. A study carried out at The University of Chicago Pritzker School of Medicine Neurology outpatient clinic revealed that the volume of cases a department treated had a positive correlation with performance on measures of specialty knowledge and clinical skill.²⁷ “Special clinics” in teaching institutions with large dependent populations will more effectively serve the purpose, in agreement with the principle “the bigger the better”.

Successes and Advancements

Data from the Cochrane review “Routine hospital admission versus outpatient or home care in children at diagnosis of type 1 diabetes mellitus” suggest that adequate outpatient/home management of type 1 diabetes in children from diagnosis is advantageous. This treatment setting was not found to be inferior in terms of metabolic control, the occurrence of acute complications, hospitalizations, psychosocial variables, and behavior, or total cost.²⁸ Specific care provided by medical teachers is of a high professional standard and medical students learning in this manner will find it beneficial.

A study was conducted to assess the feasibility and efficacy of an outpatient, community-based clinical education experience for second-year Rheumatology fellows based on an established teaching model. This model of clinical teaching termed “The High Clinic” was found to be effective in the setting of a Rheumatology teaching clinic. The characteristics of successful implementation were augmented patient exposure, increased interactions with supervisors, and CBL. It has also been suggested that the model is applicable to and utilized in other specialties.²⁹

Establishing “Special clinics” managed by experts in teaching hospitals, and potentially non-teaching hospitals is highly desirable given the advantages discussed in this article. Placements in these clinics can have multiplicative effects on the education of primary care physicians.¹ Maintaining this competence and expertise requires continuous professional development. The implementation of “Special clinics” is likely to contribute by enhancing the quality of clinical teaching, improving clinical practice, creating a culture of scientific methodology, developing local and transferable expertise, creating and maintaining excellence, and advancing the frontiers of exploration. From this focussed work, novel findings for evidence-based medicine will emerge.

Conclusion

“Special clinics” will soon form a major component of the hospital workload and play a crucial role in medical education. They provide the advantage of condition-specific patient-centered care, the motivation for excellence. Clinical skills learned by medical students in “Special clinics” will undoubtedly contribute to long-term improvements in the medical care they deliver.

Sir William Osler, Professor of Medicine, Oxford, UK articulated that “To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.” This should continue to motivate the current generation of educators in order to inspire greatness in the next generations of doctors.

Acknowledgments

The authors are thankful to the creators of all references cited as well as the formulators of all regulatory policies and guidelines.

Disclosure

The authors report no conflicts of interest in this work.

References

- Jain S, Thapar RK, Mallick A, Tiwari S, Yokesh D, Abhijit YV. Evidence based focused approach for fulfillment of aims: experiences of an asthma clinic. *Indian J Child Health*. 2017;4(2):170–175. doi:10.32677/IJCH.2017.v04.i02.014
- National Academies of Sciences, Engineering, and Medicine. *Graduate medical education outcomes and metrics: Proceedings of a workshop*. Washington, DC: The National Academies Press; 2018. doi:10.17266/25003.
- Medical Council of India. Salient features of regulations on graduate medical education, 1997 (amended up to May 2018). Available from: <https://www.nmc.org.in/rules-regulations/graduate-medical-education-regulations-1997>.
- General Medical Council. Promoting excellence: standards for medical education and training; 2015. Available from: www.gmc-uk.org/education/standards.asp. Accessed July, 2020.
- Medical Council of India. Medical Council Of India postgraduate medical education regulations, 2000 (amended up to May 2018). Available from: <https://www.nmc.org.in/wp-content/uploads/2019/12/Postgraduate-Medical-Education-Regulations-2000.pdf>.
- The Editors. The practice of medicine. In: Jameson JL, Fauci AS, Kasper DL, Hauser SL, Longo D, Loscalzo J, editors. *Harrison's Principles of Internal Medicine*, 20th ed. New York: McGraw Hill; 2018:1–8.
- de Vries H, Sanderson P, Janta B, et al. International comparison of ten medical regulatory systems: Egypt, Germany, Greece, India, Italy, Nigeria, Pakistan, Poland, South Africa and Spain. Santa Monica: RAND Corporation; 2009. Available from: <http://www.rand.org/>. Accessed January, 2017.
- Sood R, Adkoli BV. (2000) Medical education in India – problems and prospects. *J Indian Acad Clin Med*. 2000;1(3):210–212.
- Bi M, Zhao Z, Yang J, Wang Y. Comparison of case-based learning and traditional method in teaching postgraduate students of medical oncology. *Med Teach*. 2019;41(10):1124–1128. doi:10.1080/0142159X.2019.1617414
- Bligh J. The clinical skills unit. *Postgrad Med J*. 1995;71(842):730–732. doi:10.1136/pgmj.71.842.730
- Good ML. Patient simulation for training basic and advanced clinical skills. *Med Edu*. 2003;37(Suppl.1):14–21. doi:10.1046/j.1365-2923.37.s1.6.x
- Bradley P, Postlethwaite K. Setting up a clinical skills learning facility. *Med Edu*. 2003;37(s1):6–13. doi:10.1046/j.1365-2923.37.s1.11.x
- Al-Elq AH. Medicine and Clinical Skills Laboratories. *J Family Community Med*. 2007;14(2):59–63.
- Ahmed AM. Role of clinical skills centers in maintaining and promoting clinical teaching. *Sud J Public Health*. 2009;4:349–353.
- Jain S, Chandra N, Thapar RK. Paediatric surgery experiences of a tertiary referral hospital: International Classification of Diseases Spectrum for teaching, planning, & scaling up services. *Indian J Child Health*. 2019;6(6):313–319. doi:10.32677/IJCH.2019.v06.i06.013
- Cooper N, Cracknell NL. Clinical decision-making. In: Ralston SH, Penman ID, Strachan MWJ, Hobson RP, editors. *Davidson's Principles and Practice of Medicine 23rd Edition*. Edinburgh: Elsevier; 2018:p 1–12.
- Wilkinson IB, Raine T, Wiles K, Goodhart A, Hall C, O'Neill H, editors. *Oxford Handbook of Clinical Medicine*. 10th ed. Oxford: Oxford University Press; 2017:41, 660, & 763.
- Millán-Longo C, Rodríguez Molino P, Del Rosal Rabes T, Corral Sánchez D, Méndez Echevarría A. Usefulness of a specialised primary immunodeficiencies clinic. *An Pediatr (Barc)*. 2019;91(6):408–409. doi:10.1016/j.anpedi.2018.12.010
- Cohen O, Avinadav E, Sharon E, Pirogovsky A, Freud E. Pediatric and adolescent surgical breast clinic: preliminary experience. *J Pediatr Adolesc Gynecol*. 2020;33(1):23–26. doi:10.1016/j.jpago.2019.08.010
- Vallotton K, Métral M, Chocron O, et al. Evaluation of an outpatient multidisciplinary Neuro-HIV clinic by the patients and referring doctors. *Rev Med Suisse*. 2017;13(558):782–786.
- Lankveld WV, Franssen M, Stenger A. Gerontorheumatology: the challenge to meet health-care demands for the elderly with musculoskeletal conditions. *Rheumatology (Oxford)*. 2005;44(4):419–422. doi:10.1093/rheumatology/keh555
- Jacobs F, Stegmann K, Siebeck M. Promoting medical competencies through international exchange programs: benefits on communication and effective doctor-patient relationships. *BMC Med Educ*. 2014;14(1):43. doi:10.1186/1472-6920-14-43
- Rhatigan JL, Farmer P. Global issues in medicine. In: Jameson JL, Fauci AS, Kasper DL, Hauser SL, Longo D, Loscalzo J, editors. *Harrison's Principles of Internal Medicine*. 20th ed. New York: McGraw Hill; 2018:3391–3401.
- Dastagir K, Limbourg A, Tecklenburg A, Vogt PM. A specialized university outpatient clinic of the department of plastic and aesthetic surgery. *Handchir Mikrochir Plast Chir*. 2019;51(4):275–283. doi:10.1055/a-0942-9692
- Dwamena F, Holmes-Rovner M, Gauden CM, et al. Interventions for providers to promote a patient-centred approach in clinical consultations. *Cochrane Database Syst Rev*. 2012;12. Art. No.: CD003267. doi:10.1002/14651858.CD003267.pub2
- IOM (Institute of Medicine). *Health Literacy: Improving Health, Health Systems, and Health Policy Around the World: Workshop Summary*. Washington, DC: The National Academies Press; 2013.
- Albert DV, Blood AD, Park YS, Brorson JR, Lukas RV. Breadth versus volume: neurology outpatient clinic cases in medical education. *J Clin Neurosci*. 2016;28:20–23. doi:10.1016/j.jocn.2015.12.020
- Clar C, Waugh N, Thomas S. Routine hospital admission versus out-patient or home care in children at diagnosis of type 1 diabetes mellitus. *Cochrane Database Syst Rev*. 2007;2. Art. No.: CD004099. doi:10.1002/14651858.CD004099.pub2
- Almoallim H, Chalmers A, Page G. The high clinic: a pilot project of a new model for an outpatient, community-based teaching clinic in rheumatology. *Med Teach*. 2006;28(8):713–716. doi:10.1080/01421590601102956

Advances in Medical Education and Practice

Publish your work in this journal

Advances in Medical Education and Practice is an international, peer-reviewed, open access journal that aims to present and publish research on Medical Education covering medical, dental, nursing and allied health care professional education. The journal covers undergraduate education, postgraduate training and continuing medical education

including emerging trends and innovative models linking education, research, and health care services. The manuscript management system is completely online and includes a very quick and fair peer-review system. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <http://www.dovepress.com/advances-in-medical-education-and-practice-journal>

Dovepress