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Placing education at the centre of the outpatient clinic improves learning and experiences for everyone- Using the Multilevel Attainment of Learning, Teaching and Support approach (MALTS)

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Complete List of Authors:	Blair, Mitch; Imperial College London, Paediatrics Wortley , Elizabeth ; North West London Hospitals NHS Trust, Paediatrics McGuff, Kirsty; North West London Hospitals NHS Trust, Paediatrics
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Placing education at the centre of the outpatient clinic improves learning and experiences for everyone- Using the Multilevel Attainment of Learning, Teaching and Support approach (MALTS)

Mitch Blair, Elizabeth Wortley and Kirsty McGuff

Abstract

A large proportion of consultant time is spent in out-patient practice. This setting provides an excellent learning environment for different levels of trainee if well organised. This article describes an evidence based teaching approach and its evaluation by both trainees, patients and carers in a typical DGH setting which it is hoped others might find helpful.

Introduction

Teaching in outpatients is much lamented as a lost art and is increasingly challenged by the need to increase efficiency and productivity in the current health service environment. Most training time is spent focusing on acquiring competencies in acute paediatrics and generally less time preparing trainees sufficiently in the knowledge, skills and attitudes required for this important aspect of consultant work.(1,2) The trend to shorter hospital in-patient admissions and subsequent shifts towards outpatient care, necessitate a refocusing of high-quality, medical education in this setting (3,4) in order to maximise on the rich learning opportunities for undergraduates and postgraduates alike. The benefits of this environment for education include providing time for; developing medical history taking, directly observed examination skills, exploring the psychosocial aspects of disease; and observing chronic diseases more completely. Spending focused clinical time together away from the interruptions of the acute setting can enhance the bonds and relationships between different team members, foster closer relationships between teachers and learners (5) and is highly valued by trainees.(6) One argument against the teaching clinic is the perceived negative impact this might have on patients and the efficient running of the service. However, integrating "learners" into clinic with active roles brings added value to both the patient experience and care provided (3). Indeed, patients report equal or greater satisfaction with their experience when seen by *any level* of trainees in teaching clinics versus in more traditional senior-led clinics and are also willing to be seen by learners again at future appointments (4). However these benefits are often overshadowed by the busy workload and expectations of the practising clinicians.

We aim to complement recent papers published in this journal on how to manage the practicalities of clinic and how to provide high quality teaching when short of time (2) with an overview of our method; the multilevel attainment of learning, teaching and support (MALTS) approach to outpatient education.

The MALTS clinic

The clinic was set up based on a philosophy of "we are all in this to learn together". The hierarchical relationships between clinical consultant, senior and junior trainee, nurse, student and parent was deliberately flattened with all views being equally valued in a respectful and confidential environment of the clinic room. For the consultant the key has been to ensure high quality evidence based practice to be the norm and that the patient experience should be a positive one. The clinic has a dedicated teaching registrar attached for a 12 month continuous period as part of their training commitments at ST6-8 level. Between 3 and 4 medical students and occasionally a GP trainee attend two parallel clinics (one led by the consultant and one led by the teaching registrar) (See Box 1). Sufficient time for learner led consultation with reduced numbers of patients has been built in to the clinic. A number of evidence based educational methods were used to inform how the clinic should run. The key aspects are described below and consist of a) pre-clinical preparation, b) teaching tools used during the clinic itself, and c) post-clinic feedback. (4–6).

a) Pre-clinic preparation:

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From all perspectives, pre-clinic preparation is crucial. At an organisational level ensuring teaching time is explicitly scheduled (e.g. longer appointment times or parallel booking of clinics (4) and at an individual level ensuring the learner has a useful, predefined role (4,6). This is particularly true for medical students.

Trainers should be specific in outlining their expectations of the learner. For example, they should outline the number of patients the learner is expected to see; what role they will play in consultations (history taking, examination, information giving); the content and form of the case presentation; any written notes that should be taken; and at what stage and how they should consult the trainer (5).

Our experience is that this is best done in dedicated time before the clinic when not only are expectations discussed, but a thorough review of all patient notes is carried out (see box 1).

The pre-clinic discussion (55 minutes) is central to the clinic's success. Each patient referral is reviewed and a discussion started around one or many of the following areas to aid diagnosis and management: The "surgical sieve" approach; consideration of the biopsychosocial approach; the anatomy and physiology of that area of the body. See Table 1

Structure for discussion having read referral letter – "what do you think might be going on here"	**Example case**	**Example answer**
Surgical sieve (eg. TIN CAN BED)	Headaches	Trauma = head injury; Infection = meningitis; Neoplastic = brain tumour; etc (the likelihood of these is for the next part of the discussion)
Biopsychosocial model	Abdominal pain	Discuss the interplay between pain, pathophysiology and social and psychological environments and how this understanding guides management
Anatomy and physiology of symptom/body area	Enuresis	Discuss bladder innervation and attainment of continence. Difference between primary and secondary enuresis and how this might indicate a 'problem' on pathway, allowing a list of possible causes to be generated to guide history, examination and investigations. Such as secondary incontinence caused by nerve impingement

Table 1. Approaches to framing the problem

This can often lead to some uncommon differential diagnoses (see table 1) but the point is to provide a structure for discussion and future working. These differentials, and their likelihood, can then be further categorised in severity and probability with the other information in the referral. The idea is not only to firmly ground the learning in basic principles of pathophysiology, but increase the appreciation for the wider context of illness, health and wellbeing beyond what the investigations show. The use of narrative medicine techniques can be helpful, and understanding the patients story as they see it, as well as our interpretation of that as clinicians who also have our own, varying, agenda (7).

A key learning point through these discussions is that using these frames allows any problem to be approached in a sensible and systematic manner, even if on initial reading the mind goes blank. This improves analytical thinking and similarly to the ABC model of resuscitation, provides a framework to fall back on when uncertain, or to ensure one is not being overcome by bias in diagnosing a patient.

b) Teaching Tools (use of Socratic questioning, consolidation of learning points, priming and modelling):

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The key here is to ask questions to ascertain level of understanding and to explore clinical reasoning technique. From the learner's perspective, this process acknowledges their presence and clarifies their role in the clinic, demonstrates the teacher's interest in the student. From the teacher's perspective, questions allow rapid assessment of the student's strengths and weaknesses and allow them to focus the session.

Selecting one teaching point or general rule per patient encounter also makes for a more effective learning experience (5). If the trainee is consulting the patient themselves rather than observe the trainer, then the concept of "priming" also contributes to efficacy. I.e. a short discussion between the trainer and trainee immediately prior to the consultation in order to focus the learner and to direct them to the pertinent points of the case. If time pressures or the complexity of cases do not allow for students to consult themselves, then "modelling" is also a useful technique. This simply requires the teacher to think out-loud and share their clinical insights and rationale. The teacher should identify and demonstrate behaviours they want learners to emulate (6).

Originally, when the clinic was started 21 years ago, a plastic box with alphabetical dividers was kept in out-patients which contained torn out articles and diagrams on common conditions with for quick reference. This has evolved into a single digital storage folder on the clinic computer. To further enhance the conversation in clinic, the Archives of Disease of Childhood (ADC) and Education and Practice editions are quickly searched for relevant up to date information on a possible diagnosis or management. This is then saved under the relevant subspecialty heading in a group folder labelled 'Clinic in a Box' allowing quick reference to up to date guidance and parent / patient information when needed. NICE, SIGN and other guidance can also be added, with the previous version of the guideline deleted at the same time. This keeps the team up to date, and everyone benefiting from one seeing a patient and exploring these aspects. Whilst we understand many teaching clinics organise separate rooms for students to see patients alone, this is not a format our clinic has taken. The learner and clinician are paired throughout the clinic to best use the above techniques. With the pre-clinic discussion being a thorough review of the registrar's case load, there are minimal interruptions for consultant or trainee in clinic as most points of discussion have already been raised.

Post Clinic Feedback:

Effective feedback is the final factor identified by both trainers and trainees (6) Feedback should be specific, about directly observed behaviours and balance descriptions of learner's strengths and weaknesses using non-judgemental language (5).

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Box 1 Exemplar timetable for MALTS clinic

Pre-clinic:

08:00 – registrar arrives in clinic, collects notes and reviews/prepares own patients for discussion (this could happen day before)

08:30 – whole team meet – including trainees, students, allied health professionals and extra doctors for the day

08:35 – discussion of patients coming to clinic that day with review of anatomy, physiology and pathophysiology of disease. Demonstration of websites and materials that may support physician or families in this condition.

Clinic – (the consultant leads a mixed team in one room and the registrar in a second parallel one)

09:30 – 1st new patient

10:10 – 2nd new patient

10:50 – 3rd new patient

11:30-12:30 – follow-up patients (up to 3 at twenty minutes each)

Post clinic:

Calling of families where child "was not brought (WNB) "

Dictation of letters.

Letter review, results review, telephone reviews

Evaluation

Evaluation of educational interventions is often lacking, which is why we felt it so important to consider this from the perspectives of medical students and trainees as well as the experience of parents and children attending the clinics, especially given the extra time and resources that go into the clinic. Trainees who had been attached to the clinic over the last 10 years were approached and invited to complete a short Survey Monkey questionnaire asking about their experiences, knowledge, skills and attitudes which they feel they have attained as a result of attending. Medical students in their 5th year, completed the Imperial College feedback system (SOLE). Parents and children were asked to complete a questionnaire after each consultation about their experience (Iwantgreatcare.org). A number of themes have emerged;

Trainees:

11/15 trainees responded to a Survey Monkey consisting of 7 questions based around Kirkpatrick's pyramid of learning (8). A notable piece of feedback was how many appreciated that period of time before the clinic

commenced to orientate both the students and trainees to the patients who were about to be seen. This allowed the possibility of testing various hypothesis for a particular problem that has been referred.

Knowledge

Trainees also appreciated the use of textbooks and looking up material before patients attended. One trainee (Q2R4) stated the importance of "community based and public information to inform patients and families".

This period of time before clinic started allows for team-based analysis of the particular problem being diagnosed, some hypothesis testing and the gathering together of materials, both to explore and clarify possible diagnoses as well as preparing in advance possible resources such as patient information leaflets for parents and children. A trainee who is now a consultant continues to use this to help support her own students. "I now use a framework approach to teach and engage students far more than history taking and examination" (Q6R5)

Skills

Trainees highlighted the importance of acquiring skills to lead a teaching clinic, develop a holistic evaluation and communication skills aided by the use of various sources.

They mentioned an increase in confidence generally; "more confidence in outpatient paediatrics, learned independent skills, clinical management." (Q4R6)

A number mentioned the importance of communication skills in particular and how different this could be compared to their other training experience. "Interacting with parents and children in a clinic setting, which is completely different to inpatients or ED" (Q5R5) and that being a doctor is more than relaying factual information about diagnosis to the patient - "Talk about conditions around the patient, not just the knowledge relevant to the condition" (Q6R9)

Attitudes

Trainees talked about the value giving "young clinicians real autonomy" (Q2R10) and "Becoming more family and patient centred." (Q4R4)

As one trainee mentioned the main change in attitude was a "greater recognition of the outpatient setting as an excellent place to train." (Q4R8)

A particular feature of this clinic was the way in which trainees and trainers were learning together. The discussion was "all-inclusive from students to consultant contributing with plans to research more if needed". (Q6R4).

"I clearly recall X telling me how he had learned something from watching me in clinic – around my style of summing up at the end of the clinic in my communication with families. This acknowledgement of a degree of mutual learning between trainer and trainee is something I try and replicate". (Q6R8)

Parents and patients

34 parents and patients provided feedback by the iwantegreatcare.org feedback tool. Median feedback scores were 5/5 out of all categories of likely to recommend service (range 2-5), kindness(range 2-5), understanding(range 2-5), safety (range 2-5), and listening (range 1-5). Interestingly, perhaps because of the time available in this clinic, listening scored most highly in patient feedback. Other comments included.

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'Wonderful', and 'showed me a medical book and explained what is going on inside my body' with staff being kind and taking time with the families being a clear theme.

Conclusions

The MALTS approach is characterised by a structured orientation and preparation for the clinical encounter, the recognition of all levels of the clinical team, the importance of placing the patient at the very centre of the consultation by supporting the development of a holistic assessment style and augmenting communication skills such as active listening. Ten out of eleven trainees have gone on to actively teach and train students and trainees in their more senior roles, many as consultants. Patients have shown great satisfaction with the clinic experience and have valued the multiple members of the team and this is an important finding in terms of effectiveness. However, the efficiency of the clinic is necessarily compromised and the Multi- Professional Education and Training (MPET, formerly SIFT) funding stream from Health Education England (HEE) provides financial compensation to the Trust of taking students and trainees and this needs to be emphasised when supporting the business case for such teaching clinics. Box 2 illustrates the situation for our department as a whole, which takes between cohorts of 8-10 Imperial College 5th year medical students in 7 week rotating blocks for a total of 40 weeks period per annum. The tariff pays a fixed amount per student year and Trusts are increasingly being held to account to demonstrate how this is being used.

Box 2 "Making the business case"- total income from student teaching and costs associated with MALTS clinic

	Type of patient	Number of Patients	OPD Tariff	Income	Total cost	Loss of out-patients income	Income from MPET to the Department of Paediatrics
Teaching clinic consultant	**New**	3	£ 207	£ 621			
	Follow-up	3	£ 131	£ 393	£ 1,014		
Average general paediatric clinic	**New**	5	£ 207	£ 1,035			
	Follow-up	4	£ 131	£ 524	£ 1,559.		
					Difference in income per clinic session	-£545	
					Per annum	£-23980	£78725*
							£54745 (net)

*for all departmental teaching activity per annum

From a consultant perspective, the clinics have allowed for a revision and refresh of knowledge of common general paediatric issues as well as the less common. The addition of trainees and students in the clinic has added practical support in terms of form filling, plotting growth charts, supporting siblings and patients in play activity. Skills have been honed in the giving and receiving of feedback to enhance practice.

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When we sign the Hippocratic oath as newly qualified doctors, we signed with a duty to teach and pass on our knowledge to the next generation. The MALTS clinic is an embodiment of that oath and a highly enjoyable part of the professional life of a consultant.

BOX 3 Benefits to patients and parents , trainees and students and consultants

Patient:

- Up to date evidence based practice
- Additional time of a normal consultation
- Opportunity to tell their full narrative

Trainee/student:

- Opportunity to explore approach to different forms of referral and potential problems
- Time to explore patient needs and background
- Opportunity to develop collaborative relationship with trainer
- Review of basic anatomy and pathophysiology, embedding deeper learning of common paediatric conditions

Consultant:

- Improved relationship with trainees
- Helps staying up to date with evidence base for practice
- Opportunity to learn new skills and techniques from trainees

Ideas for extending learning from clinic:

An effective way to consolidate and continue learning for student and teacher alike is by providing relevant homework or 'Educational prescriptions"(9). Here are some ideas for what could help the clinic and its learners further:

- student to seek and send family relevant information about a condition or resources to support
- Evidence base for a treatment
- Extend 'clinic in a box resources'
- Produce a poster for clinic wall e.g. what cereal has the most fibre or sugar in it

Resources for use in clinic and to develop skills

- Medical students Teaching and Learning in Outpatients and Beyond: how ambulatory care teaching can contribute to student learning in child health (1)
- Trainees: Managing outpatient consultations: from referral to discharge (2)
- Consultant trainers:

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- https://faculty.londondeanery.ac.uk/e-learning/teaching-clinical-skills/teaching-and-learning-opportunities-in-the-clinic-setting

Contributorship statement

MB conceptualised the paper. KM carried out the literature review. EW carried out the trainees survey and analysis. MB was responsible for Patient survey and analysis. All authors contributed equally to writing the final version

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