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What is already known about this subject

- Learning for clinical practice is best done experientially
- Child Health outcomes in the UK are worse than elsewhere in Europe
- Educational outcomes in child health training could be improved

What this study adds

- Proof of concept at scale for an new inter-speciality integrated care training model
- Active experiential learning takes place where disciplines learn together
- Learning themes are shared between specialist and generalist postgraduate doctors
- Learning themes show that the joint clinics can lead to improved clinical knowledge, skills and change attitudes of both Paediatric and GP trainees.
- That improved health outcomes - via the proxy of guidance adherence- for children and young people may be readily realised

What research in the future could add

- A realistic evaluation framework is being used in South London to consider who learns what and the mechanisms for learning.
- An understanding of the dynamics of a shared care consultation
- Transferability to other specialties

Keywords: general practice, paediatrics, learning together, children, health, integrated.

Abstract

Learning Together is primarily an educational intervention, where paediatric registrars [SpRs] and GP registrars [GPSTs] see children together in a primary care setting. Over a six month period in 2013/14, 44 learning pairs were set up, mainly in North East and Central London. Proof of concept for the model at scale was achieved.

Reported learning demonstrated clinical learning (new knowledge, skills, and communication skills); and collaborative learning (ongoing collaboration, satisfaction with team working and change in attitudes). These two themes were identified in both sets of trainees.

The self-reported learning is backed up by the results of a retrospective notes review of four common conditions constipation, asthma, feverish illness and eczema (CAFE) based on NICE guidelines or quality standards. Guidance adherence improved from 57% before the intervention in solo GP training consultations to 72% during the joint clinic intervention ($p < 0.01$). After the intervention when the GP registrars returned to normal consultations, guidance adherence was 77% compared to before the intervention ($p < 0.01$).

In addition 99% of the parents, who handed in feedback forms or took part in interviews, reported a good experience of care, and 87% reported increased confidence to manage their children's health following the consultation.

A second article examines the cost utility of *Learning Together* in its South London extension.

Introduction: current training gaps

Current general paediatric postgraduate training curricula and programmes are focused on today's predominantly hospital based system¹. Most paediatric trainees spend a maximum of six months out of hospital during their eight year run-through programmes. Such community placements tend to concentrate on neurodisability and behaviour disorder, partially addressing community curricular objectives.²

It is likely that in the medium and long-term many general paediatricians will be spending at least some of their time working within a primary care 'out-of-hospital' setting.^{3 4} Informally it is suggested that SpRs would value more community placements, and more attention to long term conditions [LTCs] as part of their programmes.

48 General practitioners currently have a three-year programme of training. About half have a formal child health placement as part of a programme⁵. A generally accepted curricular change to a four-year GP training programme, with particular reference to child health and mental health⁶ remains unfunded. Gaps in the child health learning for GPs in training have been identified before.

More fundamentally, given the organisational separation between the specialist paediatrician working in secondary care and the generalist Medical Practitioner working in primary care, it would be of value to consider their professional relationships more carefully. Trainees in each discipline are used to working together in hospital departments, but not in the environment of a GP practice. It is possible that, by each discipline working more closely together, delivery of appropriate child health

care can be advanced. Key elements from the principles of inter-professional learning are helpful: such as the value of good communication, shared leadership and role clarification, and hardly need restating here.^{7 8 9}

Even though this project concerns interdisciplinary activity, between medical specialties rather than between health care professions, these principles are nonetheless relevant. There is ample evidence that the health of children in the UK could be better than it is, by reference to European comparators, in the specific areas of emergency care, hospital admission rates, 'unnecessary' secondary care and long term condition care.^{10 11} Furthermore there is an increasing impetus to develop broader based child health training across organisational boundaries.¹²

We postulated that a learning intervention that focussed on the inter-speciality work conducted between final year generalist doctors and specialist paediatricians in training might well fill some of the clinical gaps in training, enable working together and ultimately improve care for children.

An integrated educational model

Pre pilot work in 2012 took place in three sites in North London and this work was used to define a new training model that was tested at scale in 2013-14.

Contact was made with all paediatric departments and GP trainers in North Central and East London during August 2013, running relevant meetings. This was followed up with personal contacts with training programme directors, clinical leads and relevant trainees. Once self-selected interested trainees were identified the project lead paired GPSTs and SpRs together. The pair then took responsibility for running a series of joint clinics hosted by the GPSTs own training practice. GPSTs were ST3-4 level and SpRs ST5-8. Numbers were limited by availability of trusts to release SpRs to take part in clinics as most trusts only have 2-3 senior registrars eligible and rotas were often tight.

The clinics were based around a series of patient appointments. The GPST provided continuity, and offered familiarity with computer records. Long and short appointment times were included, reflecting an aim to see complex and unfiltered cases.

The focus of the clinics was education. Supervision and senior support for these clinics came jointly from the GP Trainer and the Consultant Paediatrician. A debrief took place shortly after each clinic with the pair and GP trainer. In many places this was within a wider MDT meeting within primary care, with discussion of other virtual patients as well as those seen in clinic. In addition, paediatric SpRs were also expected to debrief with their Paediatric supervisor after clinics.

Learning was also facilitated by reflective workshops with all participants and included detailed presentations, facilitated small group discussion of cases to identify learning, snags and solutions to running the clinics.

Governance arrangements were formalised through the two London Schools of GP and Paediatrics and included training agreements. Care responsibility remained with the GP practices.

Methodology: learning and patient experience

The evaluation was in itself a pilot of a complex intervention to see if it could be delivered at scale and to give insight into learning, patient experience and guidance adherence.

Every host practice reported on conditions seen at each appointment, as recorded in patient notes, to provide a comprehensive picture on the type of cases seen. Simple content analysis was used to define learning themes. The data came from written case summaries from both GPSTs and SpRs about the consultations, written and verbal presentations at the workshops, facilitated small group discussions and field notes. Some data collection methods were trialled and then removed after low take up in a pilot phase, for example Work Based Placed Assessments. Content was aggregated into draft learning themes which were checked with the project team and advisors prior to reporting.

An anonymous feedback form was offered to parents and carers immediately after attending the joint consultation to hand into reception. On this form they were asked if they strongly agreed, agreed, disagreed, or strongly disagreed with several statements. Separately all parent and carers were also given the opportunity to take part in follow-up telephone interviews one to two months later to assess experience and confidence to self-manage. There were no questionnaires for comparator groups. 171 families gave permission to be contacted again to ask about their experience. Of these, 125 were interviewed (73%). Interviews were stopped after reaching saturation point. Feedback from the interviews supported the information from the feedback forms.

Methodology: CAFE pilot data collection and analysis

Demonstrating change in a registrar's practice, as a result of a single educational intervention, is challenging. Measures related to behaviour change, in this instance guideline adherence, are subject to bias, confounding and the Hawthorne effect. In child health, measuring outcomes is particularly challenging as the numbers seen with any specific condition are likely to be small.

A late innovation in the pilot evaluation was a retrospective analysis (known as 'CAFE') which used binary metrics to capture the outcomes of guidance adherence and an overall improvement in health, based on NICE Guidance or Quality Standards (see Table 2).

The CAFE pilot evaluation represented an opportunity to include not just process, but also health outcome measures to support the project aim of focusing on the child. Four common childhood conditions were identified as likely to be seen and having clear health outcomes: constipation, asthma, feverish illness and eczema. The metrics were agreed by members of the project team, methodological and clinical experts who had been involved in developing the guidance and standards for NICE.

The use of binary metrics enabled the aggregation of outcomes. In practice this meant that all outcomes across four conditions could be pooled to produce a total guideline adherence score and resolve the problem of small population numbers seen for any one condition. The power of this

methodology was it provided an overall reflection of care and potentially larger effect size. A longitudinal retrospective analysis of patient notes was conducted. All participants were unaware of the evaluation metrics and conditions at the time they took part in the educational intervention or in the period that after data was reported. Therefore, they were unable to tailor their consultations to meet requirements of the evaluation.

The NICE definition of terms was used throughout to support the metrics and data collection. For all of the guidance adherence and health outcomes listed in table 1 a 'yes' answer equated to an optimal outcome [with the exception of question 3.4]. The aim of high quality risk assessment and

safety netting advice is that the child does not return unnecessarily within 7 days. In the case of fever the vast majority of children will not have a serious illness and therefore 'no' represents the optimal outcome for this question.

Data was collected retrospectively across 3 time periods:

- **Before** the GP registrar started *Learning Together*, in their routine practice with normal consultations. An opportunistic sample was identified using a system report. From the system report the first sets of patient notes with any of the 4 conditions were used as a sample for the period October 2013 – May 2014.
- **During** *Learning Together*, as joint consultations took place with longer consultation slots than usual. Data on notes of all patients seen with the sentinel conditions was

The joint clinics took place from December 2013 to May 2014.

- **After** the GP registrar had taken part in *Learning Together* clinics and was back in routine practice with normal solo consultations a second sample was taken in the same way as 'before' for patients seen from January to May 2014.

All participating GP sites were invited in mid May 2014 to take part in the data collection.

only requested on the 4 sentinel conditions if the registrars had seen any child or young person with the condition in their joint clinics. Phone calls or patient follow-up for the outcome data took place in the 2-3 week period of the data collection phase and outside of the clinics.

Data sheets were filled in by the GP registrars or a member of the practice team as required and

returned to the project team. Anonymised data was analysed by a project team member and advisor. The changes in outcomes during and after the *Learning Together* clinics were compared to outcomes achieved before the joint clinics using a chi-squared test for a two by two contingency table using a calculator ¹³.

Results: learning and patient experience

Results support *Learning Together* as a feasible educational model at scale for both GPSTs and paediatric SpRs. Over the six month period:

- 848 children were seen in 145 *Learning Together* clinics
- 44 learning pairs made up of
 - 37 paediatric ST5-8 registrars
 - 40 GP ST3-4 registrars
 - The majority of pairs ran a series of four or more clinics together
- 34 GP practices hosted clinics
- 12 NHS Trusts released paediatric registrars

In the 848 children seen over 900 individual presentations of conditions or symptoms were

documented. The most commonly seen conditions or symptoms are shown in table 1

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Content analysis of the qualitative data produced the following aggregated themes from both trainees.:

- Clinical: new knowledge, skills, and communication
- Collaborative: ongoing collaboration, satisfaction with team working [defined narrowly as

Learning Together pairs or their partners 'home' team], and change in attitude were reported positively.

Two quotes on knowledge illustrate this:

"I never felt that confident about managing long term asthma. We looked it up together and I discussed with my Supervisor. Now I am very confident to make asthma plans!" [Paediatric SpR]

Paediatric
"On a practical level, the thing that helped me learn was all the resources that the Registrar told me about. Things I had no idea about before. Not just guidelines, but useful websites, things to give out to families, the nuts and bolts stuff." (GPST)

Two illustrative quotes on collaborative learning:

"It helps to improve relationships between primary and secondary care. Face to face communication is so much better than phone or email and you get to see first-hand how each other works and the different roles people have." [GPST]

had not
"I have found working on the Learning Together programme has been beneficial in ways I expected prior to starting clinics: I had expected that from an educational point of view I would probably have less to gain than my GP colleague, however while preparing for clinics and in running

the multidisciplinary team meeting lunch time teaching sessions, the depth and breadth of my knowledge about conditions which are infrequently seen in acute hospital settings (e.g. food allergy, chronic eczema) has increased hugely. I have a renewed appreciation for the work of GP colleagues, and am particularly envious of the way in which they practice holistic and family centred care
[Paediatric SpR]

parents
351 families returned anonymous feedback forms after the clinic (41%). Of these 99% of
said they agreed or strongly agreed with the statement “*I had a good experience using the clinic*”
and “*I would recommend this type of clinic to my family or friends*”. 97% also thought the doctors
worked together well. 99% thought that it was useful seeing a GP and Specialist together. 87% of parents reported increased confidence to manage their child’s health and they liked the ‘one stop’ approach.

Results: Guidance adherence - CAFE

of the
adherence
22 of the 34 clinic sites returned data. Data was returned on 68 patients before, 84 during and 33 after (see table 2) with multiple data points for each consultation which total 763.
In the CAFE analysis, we found a statistically significant difference when we aggregated all outcomes in the 4 sentinel conditions. Guidance adherence improved from 57% before the intervention in solo GP training consultations to 72% during the joint clinic intervention ($p < 0.01$).
After the intervention when the GP registrars returned to normal consultations, guidance was 77% compared to before the intervention ($p < 0.01$). This was unexpected in a short pilot.

Discussion

Learning Together has been a complex piece of work, and is only partially presented here. Not only do the trainees report valuable learning, the CAFE results are an encouraging finding that, within the confines of guidance adherence, outcomes can be enhanced. Moreover the measures in this area were unknown to the registrars in advance, and thus unlikely to be an evaluation effect. The individual data from during the intervention suggest that the impact on practice of the joint clinics was immediate. For example, once the GPST had observed how to explain a disimpaction regime for

constipation from their partner and understood the appropriate dose they carried this learning into subsequent 15 consultations. This finding was corroborated by discussions at the programme workshops across a range of conditions beyond the 4 exemplar conditions.

Something transformative could and did happen in the paired learning clinics.

More pertinent to this project however is modification of good practice in education.

Arguably, the most effective learning takes place experientially¹⁴ and in a context of care. We have sought to add

to this historically driven context the complexity of two learners in differing clinical specialisms

working closely together. Our motivation was augmented by the clear needs of a future child health

service, as described by important players in the field. *Learning Together* could be

described as a

training innovation that incorporates service development, or, a service development into which the

training of future doctors is integrated.

Any account of an integrated health service must take note of training needs, but also deal with the

silo mentality that has afflicted UK medical care since the birth of the NHS,¹⁵. If generalists and

effectively it

specialists, doctors and Allied Health Professionals are going to work together more

should start *in their training*. We can reasonably claim to have demonstrated the potential for

learning between paediatricians and GPs in training is more than each can achieve alone.

We do

have evidence for positive change from an educational intervention: certainly in terms of patient

satisfaction and guidance adherence.

The project is now extended to South London, focusing the evaluation on a realistic framework¹⁶ to

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consider who learns what and the mechanisms for their learning. See

www.learningtogether.org.uk

for further information. In our second article we report an economic evaluation of *Learning Together*

South London.

training to

We suggest some benefits lend weight to these clinics as a way of delivering child health

both GP and Paediatric trainees and it can better prepare them for working in a future integrated

child health system than other models.

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project, and

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Ethical Approval

As a service development and audit no ethical approval was deemed necessary.

Conflicts of Interest

There are no conflicts of interest apparent among the authors or project team.

Contributorship

This manuscript was prepared first by John Spicer who is the corresponding author

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