



# Developing junior doctor-delivered teaching

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**NPT increases the pool of tutors available to students and helps facilitate both practical and small group teaching**

## SUMMARY

**Background:** There are increasing opportunities for junior doctors to deliver teaching as well as formally develop teaching skills. Near-peer teaching (NPT) programmes, like that established in South-East Scotland, not only provide additional learning opportunities for students but also have potential benefits for the teachers.

**Context:** Achieving the multiple competencies required of both the medical school and the foundation programme poses significant challenges. Medical students have reduced exposure to bedside teaching, which may be contrib-

uting to the concerns raised regarding the clinical skills of recently graduated junior doctors. NPT increases the pool of tutors available to students, helps facilitate both practical and small group teaching and has other advantages, such as peer tutors being more approachable than senior staff.

**Innovation:** The NPT programme in South-East Scotland was devised by a group of junior doctors keen to improve, expand and formalise NPT. It started in 2006 as one NPT programme, with 73 tutorials delivered by 18 tutors. Last year across four NPT programmes, 324 tutorials were delivered by 108

tutors, with all tutors receiving formal tutor training. In this article we describe the South-East Scotland model, and offer guidance for those interested in setting up similar programmes elsewhere.

**Implications:** NPT, delivered by trained junior doctors, is now well established in every hospital in South-East Scotland. Our NPT model facilitates evidence-based teaching by junior doctors, is popular amongst both junior doctors and students, is sustainable and can be used as a practical example for how to generate NPT programmes elsewhere.

## INTRODUCTION

Near-peer teaching (NPT) provides a means of delivering practical training to students by tapping into the large resource of junior doctors, an important and effective pool of teachers.<sup>1,2</sup> Such programmes have steadily increased medical student teaching in South-East Scotland over the last 5 years. In this review we discuss NPT programmes in South-East Scotland, and then more broadly look at: (i) the motivations for setting up NPT programmes; (ii) the prerequisites for establishing the programme; (iii) the barriers to implementation; and (iv) the sustainability and future development of such programmes.

## NPT PROGRAMMES IN SOUTH-EAST SCOTLAND

### Pilot year study of feasibility (2006–2007)

The NPT programme in South-East Scotland was devised by a group of junior doctors keen to improve, expand and formalise NPT for medical students at The University of Edinburgh. Interested Foundation Year 1 (FY1) doctors who were graduates of Edinburgh University were encouraged to attend a preparatory session, and then selected their own topics for small group teaching. Final-year students signed up to sessions through the medical school's virtual learning environment (Edinburgh Electronic Medical Curriculum, EEMeC). Students completed anonymised paper feedback forms at the end of each session. A pilot study demonstrated that students who had attended one of the 30-minute prescribing tutorials were significantly less likely to make a dosing error in a mock examination.<sup>1</sup>

### Development of the programme (2007–2010)

Practical prescribing was chosen as the sole theme for the tutorials, because it had been identified



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as a particular issue of concern for local medical students, especially for those in their final year of training.<sup>3</sup> 'Clinical vignettes' were written by tutors and reviewed by a senior clinical pharmacologist, to standardise the teaching programme. A separate prescribing NPT programme was also developed for year-3 students.<sup>4</sup>

A tutor training day was developed and attendance was made compulsory for formal participation in the NPT programme. Graduates from universities other than Edinburgh were now also invited to teach. Additional teaching programmes were developed focusing on other topics, and FY2 doctors were also involved as tutors.

### The current programme 2010–2011

The tutor training day is now biannual, with the morning dedicated to learning theory (small group teaching, student learning styles and delivering feedback) and the afternoon involving practical experience teaching, with individuals separating into four groups representing four now distinct teaching programmes (Year-3 Prescribing, Year-5 Prescribing, Bedside Teachers and Acute Care). 'Bedside Teachers' teaches clinical examination

skills, and 'Acute Care' is centred on commonly encountered emergency scenarios.

The 'Centre for Medical Education' faculty staff at the University of Edinburgh and tutors from previous years jointly agreed upon the content, and jointly delivered the tutor training day. This year 91 of 122 attendees returned feedback forms on the training day, with 90.8 per cent of attendees agreeing that attendance at this tutor training day had prepared them more for future teaching, and 89.4 per cent of attendees agreeing that they would recommend this Tutor Training Day to other colleagues.

The number of participants and tutorials delivered have steadily increased over the years (Table 1). In particular, attendance for Year-5 Prescribing has grown in the last year. Over the four programmes, 324 tutorials were delivered in 2010–2011. A total of 122 junior doctors attended the training day, with 37 going on to participate in Year-5 Prescribing, 30 going on to Year-3 Prescribing, 30 going on to Acute Care and 11 going on to the Bedside Teachers programme.

For the Year-5 Prescribing programme, 1349 questionnaires

100 per cent of students indicated that they thought the sessions improved their confidence in clinical examination

**Table 1. Summary of programmes**

		2006–2007	2007–2008	2008–2009	2009–2010	2010–2011
Training day attendance	FY1	n.a.	27	40*	56	122
	Eligibility	FY1s in South-East Scotland who graduated from Edinburgh	All FY1s working in South-East Scotland		Foundation doctors in South-East Scotland	
Year-5 Prescribing	Tutors	18	23	41	44	37
	Tutorials	73	57	117	124	196
	Attendances	271	221	373	398	1352
Year-3 Prescribing	Tutors	–	17	35	24	30
	Tutorials	–	20*	40*	55	55
	Attendances	–	57*	118*	289	350*
Bedside Teachers	Tutors	–	–	–	4	11
	Tutorials	–	–	–	12	40
	Attendances	–	–	–	25	111
Acute Care	Tutors	–	–	–	20	30
	Tutorials	–	–	–	22	33*
	Attendances	–	–	–	73	110*
All NPT	Tutors	18	40	76	92	108
	Tutorials	73	74	216	213	324
	Attendances	271	275	688	785	1 923

Note that a student could attend more than one tutorial.

\*Estimated values.

were returned from attendees this year (86 per cent response rate). Of these, 99 per cent perceived that their knowledge had improved and 94 per cent felt that their prescribing skills had

improved following attendance. With regard to Bedside Teachers, 111 questionnaires were returned from the attendees, with 100 per cent of students indicating that they thought the

sessions improved their confidence in clinical examination. Eighty-seven per cent of respondents rated the quality of the sessions as 'high' overall, and 86 per cent indicated that they thought the sessions provided useful clinical experience that they would not otherwise have received.

*Prescriber - this looks too similar to 'mg' and risks a serious dosing error - please write out 'micrograms' in full*

		Date	21/	
		Time	11/	
			12	
Drug (Approved Name) <b>DIGOXIN</b>		6		
Dose <b>250 mcg</b>	Route <b>ORAL</b>	8		
Prescriber – sign + print <i>[Signature]</i> <b>DOCTOR</b>	Start Date <b>21/11/12</b>	12		
Notes	Pharmacy	14		
		18		
		22		

Figure 1. Example of a prescribing error

## MOTIVATIONS FOR NPT PROGRAMMES

There are many reasons why medical schools and postgraduate deaneries may want to develop an NPT programme. There is a benefit to students. The exposure of medical students to bedside teaching is declining,<sup>5</sup> which may be contributing to concerns regarding the clinical skills of junior doctors.<sup>3</sup> A General Medical

Council report in 2008 highlighted the under-preparedness of junior doctors in assuming the task of prescribing.<sup>5</sup> This may have significant consequences for patient safety as 8.4 per cent of FY1 doctors' prescriptions have been found to contain errors. Figure 1 shows an example of a prescribing error.<sup>6</sup>

Competencies requiring practical instruction such as these pose a particular teaching challenge, especially in busy, risk-averse clinical environments. Additionally, if we are to maintain small group teaching on clinical attachments with increasing student numbers, more clinical tutors would be beneficial to increase the contact time between the tutor and each group.

Near-peer teaching also has potential benefits for the tutors themselves, not just in developing teaching skills, but also in consolidating knowledge in important clinical topics.<sup>7</sup>

## PRE-REQUISITES FOR ESTABLISHING NPT PROGRAMMES

New teaching programmes occur in the context of a wider undergraduate curriculum, and in a local hospital environment. Such programmes need to identify and address the gap in student learning needs, in a manner that is both practical and feasible, given available resources. Leadership must come from the complementary work of the potential tutors and senior staff. There must be pre-existing enthusiasm for teaching amongst junior doctors. The host university and NHS trust must also be: (i) receptive to the concept of NPT; (ii) able to provide a communication network to advertise teaching to students; and (iii) able to provide both teacher trainers and a facility to run training sessions.

## OVERCOMING BARRIERS AND MAINTAINING EXCELLENCE

It is questionable whether junior doctors, a group that lacks professional teaching experience, are the best people to teach topics in which they themselves have been shown to underperform.<sup>2,3,8</sup> They may have an inadequate depth of knowledge and insufficient experience in facilitating small group teaching. In addition, because of the minimal seniority gap between tutors and tutees, there may be difficulties maintaining discipline and professional boundaries.<sup>9</sup>

We have addressed quality control issues through a variety of initiatives. These include standardisation of clinical vignettes, implementing a compulsory teacher training day and using post-tutorial student feedback to identify any perceived limitations from a learner's perspective. Other potential strategies for ensuring excellence include: (i) introducing an assessment for both the relevant topics and teaching methodology for tutors before they begin teaching; (ii) observation of tutorials by previous peer-led tutors or senior medical educationalists; and (iii) hosting forums in which tutors can openly discuss and address any perceived difficulties.

Furthermore, NPT has several advantages compared with traditional teaching, which we believe outweigh any perceived short-

comings in experience. Peer-tutors may be more approachable and better placed to understand students' learning needs, and may also be better able to express themselves at the students' level, compared with more senior teachers. In addition, peer-tutors may have more practical experience, for example prescribing on the wards in their day-to-day jobs, which they can pass onto the students. Tutorials may also incentivise tutors to improve and consolidate their own knowledge through preparing and delivering teaching.<sup>7</sup>

## ORGANISATION AND COSTS

Training tutors, organising tutorials and evaluating NPT programmes becomes increasingly time consuming, costly and difficult as the programmes expand. There is a concern that this may detract from resources invested in 'core' teaching.

The NPT programmes in South-East Scotland are currently free for both students and tutors. We use voluntary support from academic and administrative staff for running training days, organising tutorials and providing tutorial rooms free of charge. In return, the NPT programmes provide an extensive teaching resource, with the tutors giving up their time and knowledge free of charge. These resources do not seem to divert money from 'core teaching', and we have insisted that students only attend the NPT sessions if they do not clash with 'core' teaching.

**NPT programmes provide an extensive teaching resource**

### Box 1. Questions sent to those interested in teaching

- Teaching experience: teaching training attended; tutorials given or attended; teaching organised.
- What specific skills do you have to make you well suited to leading foundation doctor teaching? (50 words)
- In what ways do you think the current set-up for the training of foundation doctors to teach can be improved? (200 words)
- In what ways do you think the current set-up for the delivery of foundation doctor-led teaching can be improved? (200 words)

**Regular evaluation is essential, from the perspective not just of students but also tutors**

## **SUSTAINABILITY AND FUTURE DEVELOPMENT**

The scheme in South-East Scotland is sustainable and growing, with over half of the current FY1 doctors participating.

Initially, an appropriate planning group was assembled, involving junior doctors, medical educationalists, medical students and foundation programme leaders, thereby ensuring that at the regular meetings problems from each perspective were noted, action points were made and individuals took responsibility to carry them out.

Regular evaluation is essential, from the perspective not just of students but also tutors and, if involved, patients. Sustainability also requires a transparent and equitable model for the appointment of future programme leaders. To gauge possible contributions to the programme, we sent out a simple four-question email (Box 1) to those expressing an interest. Any foundation doctor expressing an interest in teaching was then given an opportunity to do so, and a role was found for them, from leading a programme to delivering tutorials.

The scheme has already been expanded to Tayside, and a free, open access website is currently under construction, to facilitate the transfer of the 'South-East Scotland experience' to other regions in the UK. The website will: (i) facilitate wider dissemination and development of the current scenario bank; (ii) ease the communication barrier between students and tutors; (iii) provide online training for tutors; and (iv) provide opportunities for national NPT evaluation and comparison.

The training has been so successful that it is now being linked to Student Assistantship Training, an apprenticeship-style teaching

requirement for junior doctors in South-East Scotland.

## **SETTING UP AN NPT PROGRAMME IN YOUR HOSPITAL**

Below is a step-by-step guide on how an enthusiastic doctor can set up an NPT programme.

### **Background**

1. Liaise with medical students, junior doctors and teaching faculty staff to identify an unmet learning need, and how NPT might address it.
2. Decide on the leadership of the scheme, involving a mixture of both senior staff and junior doctors. Typical stakeholders include academic and clinical staff, senior management, the medical education unit, administrative staff and the students themselves.
3. Identify and document the aims and objectives of the project for the leadership team, the tutors, the tutees and the institution.
4. Calculate the staff requirements and funding implications.
5. Identify potential barriers to success. This can partially be achieved through piloting the programme.
6. Delegate actions amongst the organising team, and ensure a clear timeline is in place for achieving goals.

### **The tutorials**

1. Outline suitable times and locations for tutorials. For example, teaching around patients should not occur during protected meal times.
2. Outline the format of the tutorial, including a typical plan of activities (e.g. clinical vignette) and the resources required.

### **Participants**

1. Outline the cohort from which tutors will be drawn (e.g. foundation doctors), and devise an equitable local recruitment process.
2. Outline the cohort from which the tutees will be drawn (e.g. year-3 students on cardiology rotation), determine the prior knowledge and experience of the group, and devise an equitable way to facilitate student sign-up.
3. Tutees should have easy access to the date, time, place, subject of discussion and what they need to bring with them (e.g. drug chart for prescribing tutorials).
4. Train tutors based on their prior knowledge and experience. Outline the preparation expected of tutees. Provide tutors and tutees with aims and objectives for their tutorials.
5. Support both tutors and tutees through junior and senior doctor contacts, plus feedback forms. Formally acknowledge tutor participation.

## **EVALUATION**

1. Design an evaluation system. For example, look at feedback from participants, observe tutorials, conduct pre- and post-NPT session tutee assessment, or compare the academic performance of those attending NPT tutorials and those not attending.
2. Consider opportunities for research in relation to NPT.

## **CONCLUSIONS**

Developing and sustaining this scheme required significant preparation, with the collaboration of medical students, foundation doctors, senior clinical staff, the medical education unit and lead-

ers of the foundation programme. Key topic areas in the undergraduate curriculum were identified, tutors were recruited, trained and then each year the process was modified and expanded based on feedback from all parties involved.

Near-peer training, delivered by trained junior doctors, is now well established in every hospital in South-East Scotland. We have demonstrated that the scheme: (i) facilitates teaching by junior doctors who have had formal teacher training; (ii) is popular amongst both junior doctors and students; (iii) is sustainable; and (iv) has the capacity to expand and accommodate new initiatives and ideas.

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The scheme facilitates teaching by junior doctors who have had formal teacher training

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**Acknowledgements:** We would like to thank all the tutors, administrators and programme leaders who have contributed to the NPT programmes in South East Scotland since 2006. We would also like to thank the following organisers for providing data on their programmes (Table 1): Kyle Gibson (Year 5 Prescribing), Oliver Prince/Scott McNeil (Acute Care), Matthew Seah (Bedside Teachers), Matt Sims, David Hall, Adam Archibald, Oliver Lloyd, Kate Wilkinson and Amy Sadler (Year 3 prescribing).

**Funding:** None.

**Conflict of interest:** None.

**Ethical approval:** Not required.

doi: 10.1111/j.1743-498X.2012.00622.x