Health Education England

Better Training Better Care (BTBC)
Pilot Site Evaluation Report

This report is designed to capture your pilot project in your own words. Each section should be completed in full, with appendices attached where necessary.

When completing the report, please adhere to the points below:

- Ensure that you complete each field provided.
- Ensure your answers are concise. Although there is no specific word count for each section, we are looking only for the relevant information to support wider adoption of your project. This report is intended to capture the fundamentals and the key outcomes of your project and should be succinct and easy to read, using plain english.
- Any toolkits, 'how to' guides or other resources that you feel are key to support the delivery of your project should be attached as appendices.

Please note that more detailed data and analysis of your project will be captured by our national evaluation partner Matrix Knowledge for them to independently assess.

Title

Please insert the title of your pilot and if applicable, a strapline to sum up the project in one sentence e.g.

Enhanced education in handover with supporting e-solution
Improving trainee skills and patient safety

Inter-professional teaching sessions focused on practical prescribing, to develop a culture of safe and effective prescribing.

Introduction

The introduction should to summarise the background to the pilot intervention, what it set out to achieve and why.

1. Background

1.1 Rationale and drivers

- What was the rationale for choosing the project?
- What was the situation before the pilot was initiated?
- What were the local drivers / contextual factors?
- What problems were you trying to solve by implementing the project?

Foundation doctors (FY doctors) are taught therapeutics at medical school, but it takes time for them to become safe, independent and cost-effective prescribers.

The 'EQUIP Study' (Dornan, 2009) showed an 8·4% prescription error rate for FY1, and 10·3% for FY2 doctors. Of these errors, 1·7% were potentially lethal. Pharmacists, nurses, or other doctors detected nearly all of these errors before the drugs were dispensed.

Poor prescribing may be the cause of poor or suboptimal therapeutic responses and adverse drug reactions (ADRs), and is wasteful. In the UK, 6.5% hospital admissions are caused by ADRs (Pirmohamed, 2004) and when ADRs to drugs prescribed in hospital are added to these, the overall bed occupancy due to ADRs is close to 10%.

The National Patient Safety Agency (NPSA) reported that between September 2006 and June 2009 there were 27 deaths, 68 episodes of severe harm and 21, 383 other patient safety incidents as a result of delayed/omitted medications, across the UK.

Junior Doctors are often unaware of NPSA guidance, CQUIN goals or local incidents, which identify predictable high risk situations. Pharmacists need to appreciate these challenges to work effectively with junior doctors to improve patient care.

As one of sixteen UK pilot sites for the 'Better Training Better Care' (BTBC) initiative , we developed, piloted and are evaluating a project called 'Promoting Practical Prescribing' to address some of the issues above.

The project works alongside an e-learning course called 'SCRIPT', produced by Health Education West Midlands and local Universities which all Foundation Doctors in the West Midlands are required to complete. The drivers for this project were to improve prescribing within the trust and to encourage pharmacists to learn alongside junior doctors. To encourage junior doctors to complete SCRIPT throughout the year rather than end load and therefore put this learning into practice throughout the year.

2. Approach and engagement

2.1 Project development

- How was the project developed?
- What was the approach taken for delivering the training intervention(s)?
- Who was involved in its development and implementation?
- What were the aims and objectives of the pilot?

The development team comprised of Dr Whallett, medical education director, Geoff Phipps, principal pharmacist and Hayley Pearson, educational pharmacist.
Stakeholders were involved throughout the process, with links established with the University of Birmingham, support and input received from the Trust's Chief Executive and Director of Pharmacy, and involvement from a consultant who helped to present some of the sessions.
There was a different 15 session programme for the FY1s & FY2s. The sessions were aligned with the foundation year curriculums and supported by resources from the SCRIPT e-learning system, provided by the University of Birmingham. The university staff supported the pharmacists in gaining access to the SCRIPT and was also involved in presenting and feedback gathering at some of the sessions.
A number of potential problems were identify prior to and during start up. Because the start date for the project did not give a lot of notice and began as soon as new doctors were joining the Trust, we were unable to capture any base-line data pre-project to compare our results with.
Considerable thought and discussion was required, to prioritise the themes for the year,

Aim

- To provide a protected inter-professional learning environment which enables Foundation Year 1 and 2 doctors and pharmacists to develop a culture of safe prescribing in a simulated environment

Objectives

- To develop a culture of safe and cost-effective prescribing within the Trust and to demonstrate that our course improves prescribing in specific areas

- To provide junior doctors and pharmacists with an opportunity to work together, understand each other's role, share knowledge and gain the confidence to interact with each other in the classroom and collaborate to promote good prescribing on the ward

2.2 Engagement

- Who did you need to engage in the pilot – for example: trainees, trainers, consultants, patients, executive Board members?
- What was the level of lay and patient involvement?
- Did you get support from an academic partner to develop the evaluation and outcome measures?

The success of the project was dependant on a committed co-ordinator. In our case an Educational pharmacist. The programme was supported by trainers; e.g.; consultants, specialist pharmacists, non-medical prescribers, specialist nurses. Development of their sessions and agreement for their participation was important.
It was essential to get the trainees committed and engaged from the start. Feedback from previous years induction programme led to the request for Pharmacy to include more detail about prescribing for the FY1 doctors and so increased time to concentrate on prescribing was negotiated. The FY2 doctors did not have a prescribing induction programme, so the first teaching session for the FY2 programme allowed us to explain the aims and objectives of the project
There was no direct patient involvement in the project.
As the training sessions were linked to the e-learning package SCRIPT, it was important to engage with the University of Birmingham, to facilitate access for Pre-registration and band 6 pharmacists who were participating in the programme. It was essential for the facilitator of the programme (Educational Pharmacist) to access SCRIPT modules, so the prescribing training programme, could be integrated with the e learning and aims and outcomes clarified. Birmingham University staff was able to offer support and guidance on this as well as enabling FYs to be monitored for their uptake of SCRIPT modules throughout the year.

2.3 Project management and governance

- How was the project managed and implemented? i.e. what governance, project management structures and processes were put in place?

The initial project team comprised of

Role	**Name**
Senior Responsible Officer (SRO) and project lead	A. Whallett
Pharmacy lead	G. Phipps
Education Pharmacist	H.Pearson
Head of Pharmacy/Assistant Director of OPs	R.Cattell

Professor Martin Kendall a Hospital Trust board member was co opted onto the team, where his links with Birmingham University medical school proved invaluable. Staff from Birmingham University School of Pharmacy also attended adhoc meetings assisted with some teaching and conducted some of the participant feedback sessions.
The project team provided overarching governance with feedback to the Trust board
The educational pharmacist was responsible for the development, communication and organisation of the programme. The project lead and pharmacy lead providing support outside the team meetings.

1. Resources

3.1 Funding

- What funding did you bid for as part of your application and how much were you awarded?
- What were the overall financial resources required to deliver your project? Please include the amount of trust funding required in addition to the BTBC funding.
- What was the final budget amount at the end of your project? (Please include the detailed funding schedule as an appendix.)

Bid for and received £36,575:

Based on 0.5 WTE band 8A pharmacist to prepare, manage and facilitate the educational sessions and trainee feedback sessions plus provide ad hoc pastoral support for FY doctors - £25,699

- Administrative support within pharmacy - 1-2 sessions per week (Band 3 admin support) - £3,964
- For time for support from the Head of Medical Education – 0.5PA per week of consultant time - £4,912
- Stationery, IT support £2,000
- Trust funding was indirect as resource commitment included Consultant and Clinical specialist preparation and teaching time for a 1.5 hr teaching commitment. Also senior pharmacist support for educational pharmacist.

The final budget amount was as detailed above. Funding schedule below (Ignore Heart of England FT figures)

(Start date)
(End Date)
(Payment)

							50%				25%										25%	
			2012/13												2013/14							
Pilot Site	**SHA**	**Funding**	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Dudley Group of Hospitals NHS Foundation Trust	WM	£36,575					£18,288				£9,144						30/6/13		£9,144	
Heart of England Foundation Trust	WM	£97,030					£48,515				£24,258								£24,258	
TOTAL		£133,605					£66,803				£33,401		£0						£33,401	

3.2 Staffing

- What were the human resources required to deliver your project?

Staff required to deliver the programme included a programme facilitator (Educational Pharmacist in our case) supported by consultants/specialist pharmacist/specialist nurses who developed speciality sessions especially for FY2s.
Clerical staff was used to obtain and prepare materials for the session, e.g. printing, photocopying etc.
Pharmacists, technicians and pharmacy students collected and input audit data used to measure outcomes.

3.3 Other key resources

- Did you require any IT equipment or other types of equipment / specialist input?
- Did you require any specialist medical devices or materials?

Equipment used included a computer and projector to display the presentation/scenarios. Drug Charts other supplementary prescriptions such as oxygen charts , outpatient prescriptions, etc were also used for the prescribing activities
Access to, or copies of, sections of the BNF and BNFC and online resources were used within the session to enable the trainee to gain practical experience in a simulated environment.
Access to SCRIPT was needed for all pharmacists and trainers.
Photocopier and stationary were used throughout the programme to provide material for the sessions.

2. Achievements and outcomes

4.1 Overall achievements and critical success factors

- What have been your greatest achievements and why?
- What have been the critical success factors for enabling these achievements?

The greatest achievement was actually creating a programme about prescribing that was enjoyed and felt to be beneficial by the junior doctors that improved communication between pharmacists and doctors. The programme not only improved the relationship between the pharmacy department and junior doctors but even with consultants who were a part of the programme. Throughout the programme consultants who had been involved also became more aware of the risks around prescribing and would contact the facilitator to ask if more areas could be brought into the teaching, or if particu lar areas of concerns could be built into the sessions for the following year. The programme made people more safety aware with prescribing both with junior doctors and those involved in the sessions and this was a great achievement.

The factor that really led to this was having the programme as IPL – so pharmacists and doctors learnt together, but also having a pharmacist as a facilitator; this helped focus the programme on the aim of the programme which was safer prescribing but also helped bridge the gap between doctors and pharmacists. Having a consultant and a pharmacist lead on the sessions really showed how well doctors and pharmacists could work together and where each other's strengths were. Without the multidisciplinary approach to this the programme would not have been as successful as it was.
Another factor was also having people who were passionate about the programme like the project lead, Dr Whallett, who did well to promote the programme amongst his colleagues and encouraged them to come on board and teach on the sessions. Having enthusiastic members of the project team is what really helped in its success; all members put in huge amounts of effort to ensure the success of the programme and this success can be seen in the feedback.

4.2 Delivered outcomes

What outcomes has the project delivered for the following:

- For trainees
- For trainers
- For patients
- Across the wider multidisciplinary team
- That provide value for money

Please provide headline key findings with possibly a bar, line or pie chart to summarise the findings, rather than detailed analysis and tables. Matrix Knowledge will ensure that they capture the detailed data as part of their evaluation.

NHS
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Trainee outcomes

- The main aim of **delivering a successful training course on safe prescribing** was achieved (see appendix 6 for feedback). All participants gave feedback that showed that the training course met their expectations, that it was pitched at an appropriate level, they learnt new things, the session content was good and their attendance was worthwhile.
- Trainees gained a **greater confidence in prescribing**. This was assessed by conducting confidence assessments at various stages throughout the programme. FY1s had four confidence assessments; At induction, Month 1, Month 3 and at the end of the programme. FY2 doctors had three assessments; Month 1 (at first session), Month 3 and at the end of the programme. Their confidence was assessed after each session and how they felt about prescribing after the teaching and this showed that the session improved their confidence. The data collected from the focus group at the different stages of the programme also supported this. (see below for expansion and appendix 1)
- Trainees gained more **experience of prescribing**. The feedback given throughout the programme showed that the trainees found this beneficial and enjoyed this experience of practicing prescribing in a safe environment. The focus group highlighted this with one of the trainees saying:**"there's always been times when you thought 'oh thank god I did this teaching'"**
- The programme **raised their awareness of safety issues**. Some sessions helped raise awareness of NPSA alerts e.g. Insulin prescribing and prescribing of LMWH for treatment doses. This was picked up in the feedback given in that trainees stated:
  "Yes – made me much more cautious"
  "yes – safer, more confident"
  "Increased confidence and awareness when prescribing"
- **Communication with Multi-disciplinary Team** improved as a result of the sessions. Anecdotally there appeared to be a lot more phone calls to the department, in particular to the Pharmacist Professional Checking Area, asking for advice before prescribing incl. Discharge letter advice or initiation of new medication. This appeared to increase over the year. This can be linked to the doctors having a better understanding of the pharmacist's role as the trainees stated that they were **"more aware of their role and what questions I can ask them".** And one trainee also said **"Normally when a consultant or colleague prescribes against a guidelines then I will call for some advice to add clout to my argument"** which showed that they felt supported and called for advice.
- **An improvement in the quality of prescribing**. Audits that occurred over the course of the programme showed this. An improvement can be seen in the adherence to guidelines for antibiotics (seen in appendix 7), guidelines was around 40%, but these were now 56% and 60% for respiratory and elderly care wards respectively. Audits conducted in insulin prescribing over the programme showed a dramatic improvement and feedback from the focus group links this to the teaching sessions that were originally conducted and then reinforced later on in the session

Expansion on outcomes

Delivery of a successful training programme on safe prescribing:

These are a list of the following sessions that were conducted for the FY1 doctors with the Pre-registration and 1st year band 6 pharmacist:

Introduction and Assessment
Taking a safe and effective drug history
Drug Allergy and Anaphylaxis
Toxic Tablets
Parenteral Poisons
Anti-coagulation
Fluids
Dosing Calculations
Prescribing in Older Adults
Drug Interactions
Pain Management
Adverse Drug Reactions
Prescribing in infection
Medication Errors
Prescribing in Renal Dysfunction

Feedback was obtained from each of the sessions for the trainers to be able to see how well it was received and what could be improved to make it better. The feedback can be seen in the appendix showing how the following:

- How well did the session meet your expectations?
- Was the material pitched at an appropriate level?
- Did you learn anything new at this work session?
- How would you rate the content of the session?
- How well did the tutor communicate the session content?
- Do you feel your attendance was worthwhile
- How confident do you feel about prescribing after the session?
-

All the feedback was grouped together for the whole programme to see what the overall feedback was like. Majority of trainees felt that the sessions met their expectations, felt the material was pitched about right, they learnt a lot or some new information and felt the overall content of the sessions was good, and communicated well by the tutor. The majority felt their attendance at the session was worthwhile and then many felt very confident or fairly confident in prescribing after this session.

FY2 sessions and 2nd year Band 6 Pharmacist:

Prescribing in Diabetes
Prescribing in Infectious Diseases
Respiratory Prescribing
Paediatric Prescribing
Heart Failure and Arrhythmias
Prescribing in Pregnancy and Lactation
Peri-operative Prescribing
Prescribing in epilepsy
Prescribing in Psychiatric conditions
Issues in cytotoxic prescribing
Prescribing in Liver Disease

Additional diabetes
Drug Calcs
End of Life Prescribing

The feedback for these sessions from the FY2's can be seen in the appendices. The majority of the trainees felt that the sessions met their expectations, the session was pitched at an appropriate level, and they learnt a lot and felt the content was good. The majority felt that their attendance was very much worthwhile and surprisingly the majority of them felt fairly confident in prescribing after the session.

This feedback showed that our trainers had pitched the sessions well, had improved confidence in the doctors for prescribing and the trainees had learnt a lot. The feedback forms also asked for suggestions for improvement and many suggestions made were around having more practical aspects in the sessions, more group work and less lecturing from the trainer. Particular formats of sessions were highlighted as to be the most engaging – this involved a scenario with a task then feedback and teaching after the task – so it kept people engaged throughout.

Trainees gained a greater confidence in their prescribing.

This was assessed by conducting confidence assessments at various stages throughout the programme.

The following questions were asked as part of the confidence assessments:

1. Before prescribing any medicines I ask others for advice first.
2. Once I make a decision to prescribe a medicine, I wonder if it's the right one.
3. In deciding on a medicine to prescribe I consider how it will affect the patient.
4. I feel anxious or stressed when prescribing medication.
5. I find it challenging to say "no" when someone asks me to prescribe something I'm unsure about.
6. I handle medication queries myself rather than ask for help.
7. If I don't complete all my daily tasks, I feel anxious or bad about it.
8. I feel hesitant or resistant about prescribing medication I have not seen before.

(see appendix for graphs for results for each question for FY1's and for FY2's)

FY1 results (appendix 1)

Throughout the programme there was a definite increase in confidence when prescribing. FY1 doctors became more confident at prescribing and instead of frequently asking for advice there was a shift towards occasionally or rarely asking for advice. Initially the majority of FY1 doctors said they frequently or sometimes considered if they had made the right prescribing decision, but by the end of the programme there was dramatic shift to the majority only occasionally considering if their decisions were right. Over the programme there was a significant shift as FY1 doctors became less stressed or anxious about prescribing. This was supported by focus group feedback where it was stated that the programme had helped improve their confidence in prescribing. The majority of FY1 doctors initially found it challenging to say "No" when asked to prescribe something they were unsure about but by the end of the programme they felt able to say no a lot more easily. Feedback from the focus group showed that many FY1s liked to deal with problems themselves, rather than asking as it was a way of learning and remembering. This also supports the concept of the simulation scenarios we used in this programme. The majority at the start of the programme felt very hesitant or resistant to prescribing medication they hadn't seen before but over the programme they became more confident. However for the last feedback they became less confident which may have been linked with the new rotation they had started

FY2 results for confidence assessments (appendix 2)
FY2 confidence assessments were different to FY1, showing FY2 doctors are initially more confident with their prescribing and this confidence grew throughout the year. By month 3 the FY2's were feeling confident as they rarely reflected on their prescribing decision however as the year progressed they became more reflective. There was a steady decrease throughout the programme of FY2s feeling stressed and anxious when prescribing medication. There was an increase in confidence in having the ability to say no when asked to prescribe something they were unsure about. Over the programme the FY2's became more likely to ask for help than handle the medication queries themselves. This is probably due to more of an understanding of a pharmacist's role as an outcome of the project, and so the doctors are utilising the pharmacists when they can. As the year progressed , FY2s became more confident in prescribing medicines they were not familiar

Comparison of FY1 and FY2 confidence assessment results (appendix 3)
The results show the difference in confidence levels between the FY1 and FY2 doctors. The FY2 doctors were more confident initially than the FY1 doctors, but throughout the programme there was a noticeable shift in their confidence to similar results as the FY2's. The main difference being FY1 doctors are more likely to handle medicine queries themselves. FY2 doctors are more likely to ask for help.

Impact of prescribing course on e learning SCRIPT data.
It was not compulsory on this programme for the SCRIPT module to be completed prior to a programme teaching session.
(see appendix 9)
It could be concluded that the new learning sessions had no significant impact on doctors' improvement from the pre- to post-test scores. However, trainees who completed the educational sessions also took the test later in the year than those who did not.
Those trainees that completed the module after the educational session waited a median of 45 days to do so. Therefore the impact of the session on their ability to complete the test accurately may have been lost owing to this lapse in time.
The SCRIPT pre/post test function was designed to monitor knowledge acquisition as trainees' progress through an online learning module. The answers to the questions can all be found within the module, therefore thorough completion and understanding should gain a score of 10/10. It could be argued that the educational session would therefore need to cover the specifics examined in the test to have an impact on the results.
Receiving an additional 90 minute educational session in the same subject may well impact on the trainee's attention to detail when completing the online module. This is a potentially interesting human factor which is worthy of further investigation using one-to-one interviews and focus groups.

RECOMMENDATIONS

- Encourage to complete the modules prior to the session, and bring their certificates with them as proof of completion.
- Use the sessions to build on the material presented in SCRIPT, introducing practical examples for the trainees to work through in the 90 minute session.
- Introduce a pre/post prescribing test in the sessions, assessing the trainee for prescribing accuracy, legality, safety and rationale. This would help show improvements in the practical skills and competency of prescribing, using SCRIPT to provide the knowledge base prior to the session.

General 'Housekeeping' Audit results:

An audit was conducted at the start of the programme and then again at the end of the programme. It was a 'snap shot' audit that looked at what was referred to as general 'housekeeping' of the prescription charts. The audit looked to collect data to show how well the prescription charts are completed. The following information was collected:

- Admission date
- Start date for the chart
- Chart Number
- Patients Name
- Patients Hospital Number
- Sex of the patient
- Date of birth
- Weight of the patient – if less than 16.
- Correct ward
- Correct consultant
- Allergies including:
    - Allergy status
    - Type of reaction
    - Signature of person documenting the allergy status.
- Number of items prescribed:
    - Percentage with a doctors signature
    - Percentage with a prescribed date
    - Percentage with a bleep number
    - Percentage with all the drug details completed.

See appendix 4 for results.

The results showed that even though we had improvement after the programme we were still not perfect at completing the charts fully. It showed there was room for improvement and areas to focus the teaching on next year. Importantly the improvements were seen in the prescribing of the drug; in particular with a date completed and all drug details being completed. There was a decrease in bleep numbers stated by the prescribing doctor but this may have been due to the introduction of the prescribing stamps that state the doctors GMC number instead. Therefore due to lack of room the doctors were using only their stamps.

Insulin Prescribing (appendix 5)

This audit is collected every 6 months and an improvement can be seen over the course of the programme. The FY1 covered insulin prescribing within the session titled parenteral poisons conducted in the October 2021 where as the FY2's had their first session in September at the start of the course, and then a recap again in march 2012. There was a great improvement in prescribing of insulin which can be seen in the December results. Using these results this was then fed back to the FY2's in the reinforcement session and then exercises designed to highlight the areas we fell short on in the audit. Then again a dramatic improvement can be seen in the audit results in July 2013 in particular in the results for insulin device stated on the chart; from 79% to 100%. This is an excellent example of how improvements can be made and then with reinforcement and audit results – even more improvements can be made further. This is key to showing that reinforcement is needed for the best effect.

Antibiotic Prescribing Audit (appendix 7 and appendix 8)

There was an improvement seen in the audit results that are collected for antibiotics. Appendix 7 shows the results for adherence with guidelines looking specifically at two ward areas; elderly care and respiratory (these areas use a high number of antibiotics which is why they have been focussed on). After the teaching sessions had been conducted the audit results showed a significant improvement in the adherence to guidelines audit; showing that raising awareness of our guidelines within the sessions and the risks of prescribing antibiotics that are not on the guidelines actually improved the prescribing in adherence to the guidelines.

Appendix 8 shows the general improvement over the year for different aspects of antibiotic prescribing e.g. allergy status completion on the chart. This was seen as a general improvement but there was a slight fall towards the end of the year just after the teaching programme finished but then this improved for the final audit. There was a definite decline in patients being on IV antibiotics for over 48/72 hours which suggested that patients were being reviewed and that antibiotics were being converted to oral antibiotics earlier and more appropriately. The audit results has shown there are areas to focus the teaching on next time e.g. more focus on documenting the indication, the duration on the chart as these did not show improvement this time but it has allowed us to give some focus to next years session.

Prescribing Incident Data (appendix 10)

All prescribing incidents that are picked up by pharmacists are recorded on intervention forms, these forms are then entered on to our incident database. The graph shows the number of incidents recorded by Pharmacy. Since the introduction of the programme there has been a definite decline in the number of incidents recorded; this may be due to less errors due to more awareness and from prescribing issues learnt within the programme or it may be due to an increase in communication between pharmacy and doctors therefore a doctor asks for advice before prescribing and so reduce the number of incidents. There was a definite point at which it fell significantly which was December after the start of the programme. The number of incidents then started to creep back up and by the time the teaching programme had finished the in April the number of incidents was back up to the usual rate and there was not much fluctuation. This suggests that reinforcement of prescribing issues and continuation of the programme actually could help keep the incidents at a low.

The junior doctors rotate every 4 months and the last month before the rotation change the number of incidents increase – this may be due to complacency in their rotation, then when they change specialities because the environment is new and the drugs used in the speciality are different then they may ask for more advice, pay more attention, be more aware at the start of the rotation hence why the number of incidents are lower.

For trainers

- The main outcome for the trainers was being able to share risks of prescribing in their speciality with the juniors. To be able to raise awareness and improve prescribing in protected time away from the ward environment.
- Feedback on their teaching technique from the juniors would help them improve on this in future, but also by asking the trainers to feedback about how they thought it went also made them reflect and learn from this as well.
- Feedback from their teaching session also indicated what the juniors wanted to know from them, if it was beneficial and if their teaching techniques allowed the juniors to get the most out of the sessions. The outcome from the sessions showed that the juniors felt it was beneficial, it met their expectations, the session was well pitched and helped improve their confidence in that speciality.

Expansion:

Feedback on session

These are a list of the following sessions that were conducted for the FY1 doctors with the Pre-registration and 1st year band 6 pharmacist:

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Adverse Drug Reactions
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Medication Errors
Prescribing in Renal Dysfunction

Feedback was obtained from each of the sessions for the trainers to be able to see how well it was received and what could be improved to make it better. The feedback can be seen in the appendix showing how the following:

- How well did the session meet your expectations?
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- Did you learn anything new at this work session?
- How would you rate the content of the session?
- How well did the tutor communicate the session content?
- Do you feel your attendance was worthwhile
- How confident do you feel about prescribing after the session?

All the feedback was grouped together for the whole programme to see what the overall feedback was like. Majority of trainees felt that the sessions met their expectations, felt the material was pitched about right, they learnt a lot or some new information and felt the overall content of the sessions was good, and communicated well by the tutor. The majority felt their attendance at the session was worthwhile and then many felt very confident or fairly confident in prescribing after this session.

FY2 sessions:
Prescribing in Diabetes
Prescribing in Infectious Diseases
Respiratory Prescribing
Paediatric Prescribing
Heart Failure and Arrhythmias
Prescribing in Pregnancy and Lactation
Peri-operative Prescribing
Prescribing in epilepsy
Prescribing in Psychiatric conditions
Issues in cytotoxic prescribing
Prescribing in Liver Disease
Additional diabetes
Drug Calcs
End of Life Prescribing

The feedback for these sessions form the FY2's can be seen in the appendices. The majority of the trainees felt that the sessions met their expectations, the session was pitched at an appropriate level, and they learnt a lot and felt the content was good. The majority felt that their attendance was very much worthwhile and surprisingly the majority of them felt fairly confident in prescribing after the session.

This feedback showed that our trainers had pitched the sessions well, had improved confidence in the doctors for prescribing and the trainees had learnt a lot. The feedback forms also asked for suggestions for improvement and many suggestions made were around having more practical aspects in the sessions, more group work and less lecturing from the trainer. Particular formats of sessions were highlighted as to be the most engaging – this involved a scenario with a task then feedback and teaching after the task – so it kept people engaged throughout.

Trainers view of sessions:
Feedback from the trainers was collected about how they felt the session went and what could be done to improve the session next time. Many of the trainers felt that they needed more time as it sometimes felt rushed to get all their points across. Some found their format did not lend well to the workshop style and this would need to be adjusted. Some trainers found it very easy to engage the trainees, whereas some found that this was something that they struggled with. Suggestions for improvements were room layout; tables would be beneficial, increase number of scenarios; some needed to shorten the scenarios so as to keep them engaged and not to lose them throughout the session. Animations would also improve the presentations and help in conveying some of the learning points. The scenarios needed to be designed to help their clinical decision making and by including another healthcare professional in the training e.g. present with a nurse, pharmacist then this would increase the holistic approach. Overall the trainers felt the sessions went well but some aspects could be adjusted to improve and help them achieve their outcomes.

For patients

There was no direct contact with the patients within the project, but the outcome of the project which was safe prescribing by junior doctors would directly impact the patients. Some audit work that we looked at showed there to be an improvement in prescribing which would lead to an improvement in administration, reduction in incidents and better, safer care for the patients.

Across the wider MDT

Anecdotally better communication with the pharmacy department was seen through more phone calls to ask advice before prescribing, so more proactive approach to prescribing. There was more of an appreciation of our role within the multi-disciplinary team as a result of the programme and this can be seen from the focus group feedback where juniors admit to not being clear what our role was previously.

1. Experienced challenges

List the challenges you experienced, why you experienced them and what steps you took to overcome them, or if not, why not? It is important to capture any challenges or issues that made an impact on progress - irrelevant of how small.

Some of the most challenging aspects were **engagement of the staff** involved. Engaging junior doctors; not in the sessions but in **completing the SCRIPT modules before** the sessions was difficult. Engagement within the sessions in particular for the FY1 doctors was not so challenging. They appeared to enjoy the practical aspects of the session; they asked questions and took opportunities to learn. The FY2 doctors were more difficult to engage within the sessions but this did vary depending on the session. Feedback from the focus group showed that both groups did not feel that it was important for them to do the SCRIPT module before the session, they did not feel the benefit of doing it before, and actually doing the SCRIPT module later on was more beneficial for consolidating learning. For future it was suggested that by making the SCRIPT module mandatory before the session then this may help reinforce this. Though it was felt that to get the most benefit out of that the sessions may need to change slightly so as not to repeat anything from SCRIPT, some feedback given was that because some of it was so similar or repeated from SCRIPT that they didn't see the benefit of doing it before. It was not made mandatory as the concern was that the doctors may miss the sessions as they haven't done the SCRIPT module therefore we'd have less attendance. I think having a champion from each year – FY1 and FY2 that could be involved in helping plan the sessions, encourage others may be the way forward. I also think by linking in with the portfolio better may also help engage them – so link in with points or outcomes/objectives on the portfolio would be helpful and engage them more.

Engagement of consultants, specialised pharmacists and nurses was also challenging, many were very enthusiastic to start with but this was not always maintained. Getting the trainers to stick to deadlines was difficult, which then had the impact on the session. The more proactive and passionate trainers were very good at designing their session, then discussing it with the facilitator and then making changes after feedback from other sessions highlighted things that worked well and what didn't. Not all trainers were this proactive, some sessions were not sent to the facilitator until the morning of the training and this made it very difficult to improve and make changes to the sessions – this showed in the training and was commented on in the focus group. Deadlines and more directed advice was given to the trainer in order to combat this problem but depending on the individual this was not always well received to have the desired effect.

Time constraints - It was difficult attempting to fit in everything that was wanted to be included in the sessions. One and a half hours was given to each session but some clinical specialities did go over the allocated time. Priorities were given to those bits of information that was felt to be the most high risk e.g. allergy status completion, or prescribing of weekly doses of methotrexate. But there were so many aspects of prescribing that wanted to be tackled it was difficult to get it all in to the sessions. Sometimes the design of the session

was compromised due to time, and trainers leaving the preparation of the sessions til last minute.

The **format of the sessions** to get the most effect, and the most participation from the group was difficult. The sessions were adjusted throughout the programme off the feedback from the previous sessions so that it could be seen that their comments were being taken on board. This was challenging as sometimes the subjects covered did not always lend to a different style of teaching. The general format was to include case studies or scenarios for the trainees to work through that involved a prescribing aspect; but sometimes the scenarios were too basic, not enough, too much talking by trainer throughout the session – it was difficult finding the right format that kept them engaged.

Time for feedback – ideally individual feedback would have been the best, so that they could improve their own practice – but this was not possible due to time constraints, At the start of the programme; feedback was given at the start of the next session but this then had an impact on the amount of time that was available for the next session to be taught, At the start of the project it was thought that individual feedback and follow up with each doctor on the wards and throughout each rotation would be done over the course of the year but designing the teaching sessions and conducting the sessions, including audit work collection over the programme did not allow for this to be included. This is something that for future years as the sessions have been written and would only need to be updated, and tweaked we could build into the teaching programme.

2. Lessons learnt and recommendations

6.1 Lessons learnt

- Other than the above challenges, what have you learnt through your experience of designing and implementing the project?
- Were there additional benefits realised that were not originally identified at the start of the project? E.g. knock-on impacts to other members of staff who were originally not targeted; greater collaboration across teams; and/or a financial gain which was not originally in the plan.
- If you were to undertake a similar project, what would you do differently?

Lessons Learnt:

The format of the session is the most important; lecturing your trainees will never engage them. Feedback from the focus group and individual feedback from each session showed that questions to get them interested and to establish a baseline knowledge level at the start was a good idea. Then practical activities that allowed group work actually was their preferred style of learning. FY1's prefer to work through things and search resources themselves to consolidate their learning and in the classroom setting prefer to do this in groups. FY2's like group work to be able to discuss options and suggestions with other colleagues. The sessions that worked well were where the teaching was consolidated by giving them a scenario, allowing them to work through it and discuss with each other, prescribe and then this was then worked through – timing was essential – too much time lost their interest and too little time was frustrating for them as they felt rushed. One session was highlighted as being excellent and this was using this format, also because the trainer had prepared in advance and discussed with the pharmacist facilitator the case studies; they were able to approach the session from a multi-disciplinary approach. This definitely got the best out of the trainees and all the feedback from this session was very positive

Additional benefits:

- Communication between doctors and pharmacy improved.
  - More phone calls before prescribing,
  - Contacted the facilitator for advice and to be shown how to prescribe complicated regimes e.g. Flolan.
- Consultant enthusiasm – other consultants heard about it and wanted to be involved. Emails to the pharmacy department about incidents within their area in prescribing and using BTBC to raise awareness amongst the juniors.
- Links with Birmingham University – pharmacy undergraduate students will be attending Russells Hall Hospital as part of their programme.

What would we do differently:

- Timetable of sessions – different order according to what juniors felt were important.
- Different timing – bring session forward to 2pm rather than 3.30pm.
- More Pharmacist involvement at teaching level to give each session the multi-disciplinary approach.
- SCRIPT – doctors are known to be very competitive in nature – use this competitiveness to encourage people to do SCRIPT before sessions by showing a graph/chart of how many people have completed SCRIPT or not.

The programme was able to fit into the junior doctors protected teaching time, though not all doctors viewed this teaching time as protected; many were disturbed throughout the session by other colleagues. Due to the medical education director being part of the planning committee for this project it allowed us to use the protected teaching time for the sessions that we wanted to do, by linking them with SCRIPT modules and the curriculum that also aided us in justifying why it was important to include the sessions in the protected teaching time.

6.2 Recommendations – project enablers

What recommendations can you provide to other NHS trusts who may want to adopt your project? Please think about the critical 'enablers' that need to be in place to ensure the success of the project.

- **Champion**
  Ensure you have someone who is enthusiastic and dedicated to making the programme successful. Have a champion for each year of junior doctors to help promote the programme and also for feedback to channel through the champion – what works, what doesn't etc. The facilitator for the course must be a pharmacist to enable success of the whole programme and to achieve that improvement in MDT.
- **Get consultant 'buy in'**
  Ensure you have support from consultants for the speciality that you wish to teach. If there is a specialist nurse and pharmacist for this area too then this really helps with the multi-disciplinary approach. This is key to show everyone's strengths and the way that they can participate in the patients care throughout their stay. Having a pharmacist as part of the team helps reinforce the safety aspects which will lead to people being more careful when they prescribe.
- **Make it part of protected teaching**
  It is important that this teaching is protected for the real benefit to be seen. If it will be

a series of sessions then try and encompass them as part of the teaching already conducted for the juniors. Compare with other sessions that they may have within their protected teaching time and ensure there isn't any overlap or repetition – this was highlighted for one of our specialties that there was a lot of repetition with their clinical teaching already. So consideration of this is important.

- **Mandatory SCRIPT completion first.**
  To see full benefit and be able to build on SCRIPT, it is important that the module is completed before the session. But the programme could be used as an alternative to SCRIPT as the sessions could stand alone separate from SCRIPT. To gain full benefit then using them in conjunction allows some of the theory to be conducted online rather than in the classroom. This then allows the classroom activities to be interactive and practical so it allows them to put their learning into practice in a safe environment. Feedback showed that junior doctors only complete these modules if they have deadlines, if they're mandatory, if they have time. If there are facilities available for the modules to be completed before the teaching session in protected time and then conduct a practical session afterwards – this may be another way of ensuring they are done.
- **Mentors**
  Something that we felt was important but were unable to put into practice due to time constraints was mentoring. Having a mentor for prescribing for the junior doctor would be beneficial as this would allow them to have someone to go to outside of the programme for advice, it would allow them to feedback on any prescribing incidents that had happened in real time so they can learn from them and would improve communication between the multi-disciplinary team. The feedback can be done in a non-threatening environment and will help them improve their practice.
- **Pharmacy involvement**
  More pharmacists that can attend and be freed up to take part in the sessions the more impact this should have. Our sessions needed more pharmacists. Both doctors and pharmacists agreed on that for different reason. Doctors felt that the pharmacists didn't have as much impact due to the small numbers of them and pharmacists felt they needed more numbers to feel more confident within the session. Having a Pharmacist be involved with the facilitating and teaching of the sessions was important as it still highlighted the role of the pharmacist, their strengths and how they can fit into the multi-disciplinary team can be seen in the sessions.

7. Sustainability and adoptability

You should be able to use the information provided in your project closure report as a basis for completing this section.

- What plans are in place to continue the project within your trust – please include details of wider trust roll-out and/or spread to other specialties?
- How is the project being managed and by who?
- What are the governance arrangements in place?

We are in the process of putting the programme together for this year. We have looked at the feedback from last year to help improve on these sessions, we have changed the order of the sessions and due to the late start in the teaching year for this set of junior doctors then we are having to give it a slightly different focus – still on safe prescribing, but less from basic level of prescribing as they have been prescribing for 2 months now. The focus will be

more on high risk medicines, use of guidelines, rationalising therapy but included in that will be the reinforcement of completion of the charts correctly.
The consultants that were involved in the sessions have been approached again and they are all keen to take part again this year. Agreement from then has been obtained and currently one session for each year has been conducted. We have built in more pharmacist involvement and will be using NMPs in the sessions to help give the multi-disciplinary approach and reinforce teamwork.

The project team still comprises of

Role	**Name**
Senior Responsible Officer (SRO) and project lead	B. Whallett
Pharmacy lead	G. Phipps
Education Pharmacist	H.Pearson
Head of Pharmacy/Assistant Director of Ops	R.Cattell

The project team provide overarching governance with feedback to the Trust board
The educational pharmacist is responsible for the development, communication and organisation of the programme. The project lead and pharmacy lead providing support outside the team meetings.

8. Feedback and testimonials

- Please use this section to capture the feedback and testimonials you have received throughout the pilot project (where consent is given). This will be used for the final case study to support the engagement with and adoption by other trusts. You may include this as an appendix, weave the comments throughout the report or insert them in this section. Please state the title of the person concerned.

- Please aim to include a good selection of quotes from trainers, trainees, other members of the MDT, the Medical or Education Director and CEO if possible.

Feedback was collected at two different points throughout the project. The first set of feedback was collected partway through the course so that we could look to make improvements to the rest of the sessions if needed. Feedback was obtained through the method of a focus group. For the FY1's the first feedback was conducted by splitting them into groups and giving them various questions, asking them to discuss and write down their responses. The pre-registration and 1st year band 6 Pharmacist were placed in a group separate to the junior doctors to allow their feedback to be collated together and looked at separately. For the FY2's the group was divided into two and half were taken off and a verbal focus group was undertaken with Birmingham University whereby they were asked questions and their responses were

recorded and then later transcribed. The remainder FY2's were split into groups and given the same questions that the FY1's were given and were asked to discuss and document their responses in the same way as the FY1's. Due to only one 2nd year band 6 pharmacist being available, they were placed in a group and asked to include their feedback in their responses. What was observed at this point was that the band 6 pharmacist was able to ensure that the group completed the questions properly and challenged some of their responses to find out why they felt like they did, whereas the group without a pharmacist in were not as focused on the task and this can be seen in their responses.

Quotes from 1st feedback sessions midway through programme: FY1:
When FY1 doctors were asked about: IPL and working with Pharmacists:

- "Found out what they actually do!"
- "Not enough pharmacists to affect learning positively or negatively"

The sessions so far:

- "Interactive session and approachable facilitator"
- "only one external speaker so far – not enough interaction, too much talking by the speaker"
- "the sessions are good for general med rotations but not specific rotations e ,g, Obs and Gynae"
- "pitch sessions at a higher level and tie in with more clinical aspects within the scenarios including investigations and management within the scenario"

When Pre-Registration and 1st year Band 6 Pharmacists were asked about: IPL and working with FY1 Doctors:

- " some of the doctors gave info from their point of view which helped us to understand their decisions"
- "helps build a professional relationship with them therefore feel it's easier to approach them on the wards"
- "feel overpowered by number of doctors, bring in more pharmacists"

The sessions so far:

- "feedback after the activities is good"
- "sessions pitched a little too high for pre-regs"
- "external speakers would be good for specialist areas, as long as there is some pharmacy focus at some point"

When FY1 and Pharmacists were asked for suggestive improvements: Combining some of the sessions was suggested e.g.

- Meds Rec and Induction session
- Allergies and Toxic tablets

More quizzes were asked for
And other sessions to be covered:

- Renal prescribing
- Medical emergencies
- Elderly care
- Neonatal and children

FY2 and 2nd year Band 6 Pharmacist:

When FY2 doctors were asked about IPL and working with Pharmacist:

- "hard for 1 pharmacist to bring anything, especially since the style of teaching is more lecture based"
- "Good that its run by Pharmacists and Consultants, practical advice is given by the Pharmacist"

When asked for general feedback:

- "More details needed to be sent out earlier about the sessions"
- "It would be useful to have a syringe driver prescribing session"
- "Good broad base of topics"

When asked for suggestive improvements:

- "Timing of the session is too late in the day – 2pm would be better"
- "variable session depending on the consultant"
- "show model answers"

External Focus Group FY2: Main themes from this:

- Specific prescribing good but would prefer more general med stuff earlier on.
- Need enthusiastic teachers.
- Case based teaching works best.
- Too repetitive with similar prescribing – too much oral prescribing – consider alternatives like infusions etc.
- Use of BNF and resources
- Felt spoon-fed a little – would like the chance to look more then they would learn better.
- Confused when guidance conflicts with advice – Pharmacist and Consultant need to discuss first
- 1.5hour on drugs – too heavy – good clinical mix needed.
- Electronic prescribing discussed at length.
- Anti-coagulation advice is a definite need.
- Need to have both input from Pharmacist and consultant – very obvious when not done together – see Pharmacists role.
- Clinically focused.

Some improvements were put into place after the focus group for the remainder of the sessions. One of the sessions was highlighted to be better than the others and some of that was due to the format and so this was introduced throughout. The structure of the session that seemed to be favoured allowed each scenario to be worked through together and gave them time to prescribe throughout the session. Further advice was then given to the other consultants presenting to structure their talk in the same way. This structure allows them to be active throughout the session, there is not too much talking by the clinician but also provides them with the model answer they are looking for throughout.
After the rest of the sessions were given then more focus groups were conducted at the end of the course to establish how well received all the sessions were. These sessions were conducted slightly differently. Both FY1 and FY2 were split this time to have a focus group about the sessions by external people from University of

Birmingham and then the remainder were split into pairs and given a series of questions to answer. The idea being that by splitting into pairs they would be able to focus better, as previous focus group showed that when in a group they can go off on a tangent and not focus on the questions asked.

Questions asked looked at the different aspects of the sessions and the objectives of the project; they were around IPL, Prescribing, sessional feedback, confidence and SCRIPT.

Quotes from 2nd feedback session: FY1:
When asked about IPL:

- "Good – conferring with other specialists"
- "I noticed the doctors did not talk much to the pharmacists, have a smaller ratio of doctors to pharmacists to reduce intimidation and improve teamwork"
- "Need more Pharmacists, ideally 50:50"

When asked if the sessions had improved their relationship with their ward pharmacist:

- "A little – more confidence in explaining why I've done things"
  This shows that some of our junior doctors feel intimidated at a ward level by the pharmacists for explaining their actions and decisions. This shows that by working and learning together they can overcome this and feel more comfortable in able to express their decision making skills.
- "more aware of their role and what questions i can ask them"
- "yes – got to know them"

When asked if they call for advice before prescribing:

- "Normally when a consultant or colleague prescribes against a guidelines then I will call for some advice to add clout to my argument"
  This showed that they were using Pharmacists to back up their decisions and calling them for support when they wanted to question or query a prescribing decision with a consultant or senior colleague.

Many call the anti-microbial pharmacist for advice as they are aware of the importance of sticking to guidelines for antibiotics.

When asked about whether these sessions improved their prescribing:

- "Yes – made me much more cautious"
- "yes – safer, more confident"
- "Increased confidence and awareness when prescribing"

When asked about which sessions were the most useful and beneficial:

- "Prescribing in infections – as its common to what we see everyday"

When asked about activities during the sessions that worked well?

- "group work – allowed you to bounce opinions off each other and clarify issues"
- "prescribing activities were good, quizzes felt like time fillers"
- "a good variety during the session is good" "Kept us interested"

Majority agreed that the format of questions mixed in with presentation worked the best and kept them "engaged", "interactive", "interested", "focused and helps emphasise points"

When asked about their confidence at the end and if the sessions attributed to it:

- "yes – feel I am more aware of the potential pitfalls of prescribing and therefore am more aware to double check something before prescribing"
- "Yes – clinical exposure forces you to as well"
- "Yes – insulin prescribing in particular"

When asked about linking in with SCRIPT and what motivates them or would have motivated them to complete them:

- "well matched", "linked well with some repetition"
- "Good – although to be honest, I mostly did them at the end. In hindsight it would have been beneficial to me if i had done them at the same time."
- "deadlines for modules"
- "making it compulsory" "making it mandatory"
- "If the sessions were designed specifically to follow on and build. If there was a list at the beginning of the session of who hadn't done it, if you lost your attendance mark if you didn't do it within a week"

External focus group FY1: Main themes:

- Like prescribing tips and tricks to help them out.
- Worried about impeding on other teaching due to so much pharmacy related stuff
- Format preferred – cases and then discussion
- Consultant leading session didn't always lend to discussion or prescribing scenarios
- Bring BNFs and reference resources throughout the sessions.
- Lots of practical aspects – mix up styles include rationalising therapy.
- Polypharmacy important and should be included.
- Duplication with SCRIPT
- More clinical stuff
- More about prescribing decisions than how to prescribe.
- Definitely improved their prescribing competence and confidence
    - "there's always been times when you thought 'oh thank god i did this teaching'"
- Noticed senior colleagues and their poor prescribing.
- IPL – familiarise yourself with Job role of the Pharmacist
- Tips/tricks allows things to be easier for you later on e.g. Gentamicin prescribing at night is better for bloods the next day.
- IPL – overpowered pharmacists
- SCRIPT more useful than sessions.
- Felt taught everything again – better to test and allow them to apply knowledge to therefore consolidate learning.
- Want more practical and more clinical, different!

Quotes from 2nd FY2 focus group: When asked about IPL:

- "not really, not enough Pharmacists but do feel that learning with the junior pharmacists is important"
- "very well co-ordinated and taught, useful having pharmacists present for practical information"

- "good, as able to understand additional things we need to record on drug charts e.g., devices for insulin"
- "need more pharmacists present in sessions for group work"

When asked if the sessions had improved their relationship with their ward pharmacist:

- "felt they would have spoke to their Pharmacist anyway as they did in their previous jobs"
- "have a good relationship already, very useful to have a wardbased pharmacist"

When asked if they call for advice before prescribing:

- "yes – call pharmacy and ask for a general pharmacist, anti-microbial – they just call the consultant microbiologist therefore they didn't feel the need to call the anti-microbial pharmacist"
- "yes – for general enquiries"

Most felt that they didn't call Pharmacy anymore than they did when they were a FY1...about the same.

When asked about whether these sessions improved their prescribing:

- "i think we practiced prescribing quite 'niche' medicines we wouldn't often normally prescribe"
- "yes – insulin prescribing; putting the device and infusions."
- "yes – feel more comfortable at prescribing infusions and CDs"

When asked about which sessions were the most useful and beneficial:

- "Cardiology, Gastro, Respiratory – it was all dependant on the consultant"
- "Diabetes – helped to prompt for devices which they found useful and beneficial"

Topics they would have liked covered

- Medical emergency drugs
- Renal
- Elderly care
- Special groups

When asked about activities during the sessions that worked well? All agreed that group work and scenarios work best

- "as clinically work on our own, so its good to ask other peoples opinions"

Questions and presentations mixed in – more engaging, encourage active learning,interactive.

When asked about their confidence at the end and if the sessions attributed to it:

- "yes – but felt it generally dose over the year"
- "yes - in terms of accuracy and safety"
- "have a greater appreciation for infusion prescriptions and insulin preparations and devices"

When asked about linking in with SCRIPT and what motivates them or would have motivated them to complete them:

- "no repetition in the sessions"

- "doesn't matter if they're done before or after – do them if they need to, many had been done the previous year"
- "mandatory – build it into their e-portfolio"
- "only a mandatory deadline"
- "suggest 2-5pm session – and include an hour for completion of SCRIPT module then the practical session afterwards"
- "only motivated by pass/fail"

External Focus Group FY2: Main themes:

- More notice on the modules
- General med sessions and surgical sessions first before specialised sessions at the end.
- Too late at 3.30pm have them earlier.
- Mix the sessions with questions and presentations.
- Resources – reference them, can't find on the hub – important to point these out to them
- Signposting is important.
- Pictures and feedback to help.
- Reinforcement is key:
  - "probably for the first week afterwards and then sometimes I'll be back at square one i find, because maybe i don't know it needs reinforcing but some of the stuff i forgot to be honest"
- IPL:
  - "Yeah, it makes you more likely to approach them you sort of realise that actually at the end of the day its better to ask and get it right in the first place than to get it wrong and go through pharmacy 3 hours later to be asked questions about prescribing stuff"
- Concerned about other teaching been forgotten about because the assumption that pharmacy have covered it has been made.
- Other trusts cover medical teaching better but we cover pharmacy prescribing better.

Pharmacists final feedback: IPL:

- Good for meeting doctors, didn't feel included all the time.
- Would have felt more comfortable having 2 pharmacists with the group of doctors for support and give them more confidence (bounce ideas of each other)
- Ratio of doctors to pharmacists: 3:1 common
- Many recognised their ward doctor – but not applicable for some (not based on wards yet)
- Felt it improved their confidence to approach ward doctors especially if they were an FY1 – easier to approach.
- Definitely achieved objective for safe prescribing and felt the prescribing was generally better on the wards.
- Definitely contributed to their clinical knowledge.
- Format – teaching then scenarios,
- Group work, good, but prefer to work on scenarios first alone and then discuss altogether.

- Quizzes and cases good.
- Confidence definitely improved by these sessions.
- SCRIPT was good baseline and linked in well
- Modules suggested were more clinical topics.
- Suggestion of pre-test to establish level of knowledge.
- Consultant presenting really made the difference between good and bad session.

Appendices

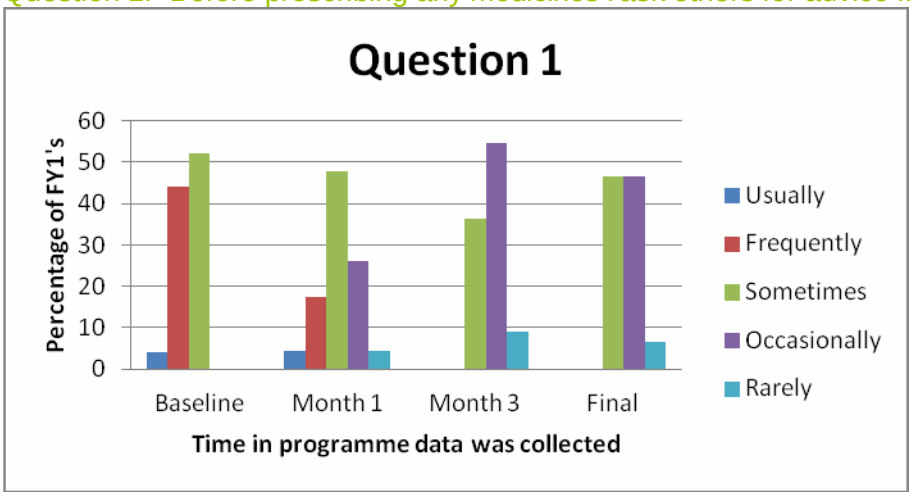
If you have developed any toolkits, 'how to' guides or other resources that you would like to share, please include these as an appendices to the report.

Health Education England

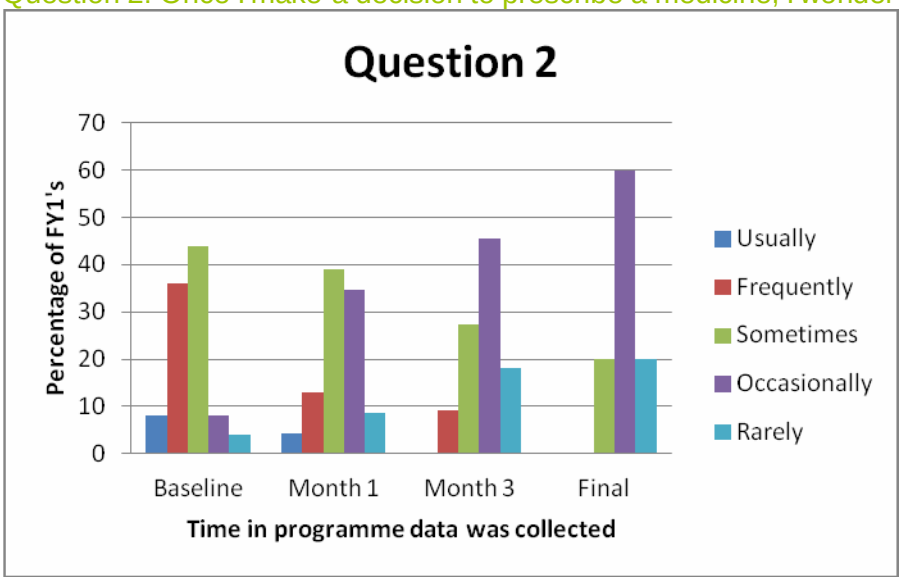
Appendix 1:

FY1 Confidence Assessment Results.

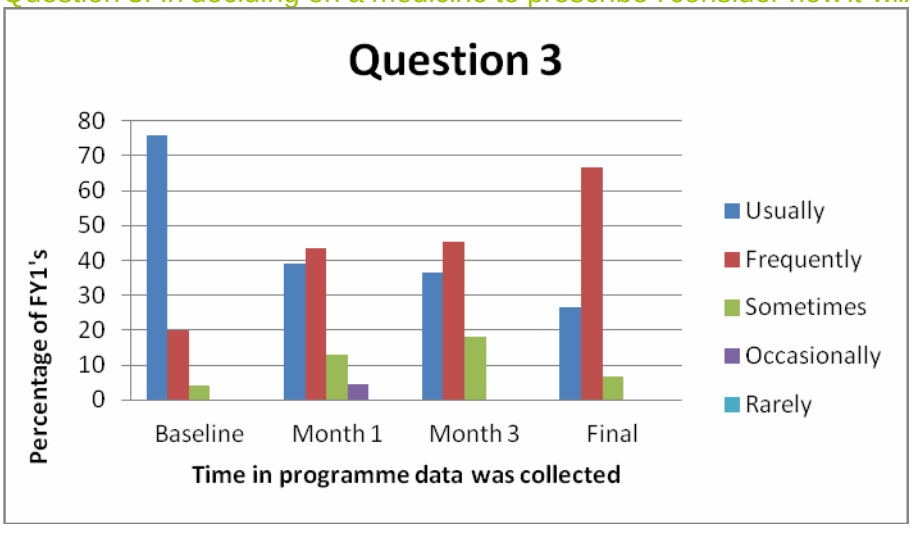
Question 1: Before prescribing any medicines I ask others for advice first.



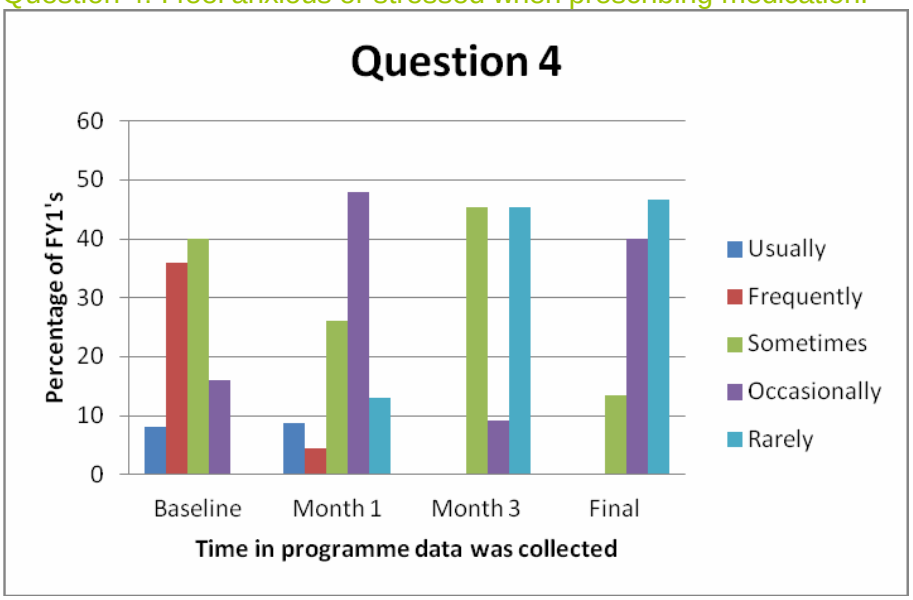
Question 2: Once I make a decision to prescribe a medicine, I wonder if it's the right one.



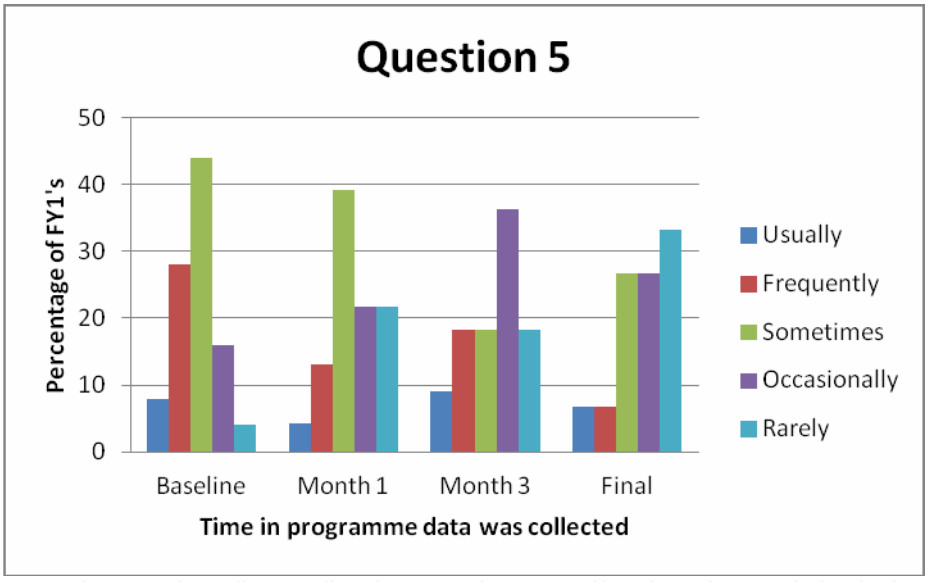
Question 3: In deciding on a medicine to prescribe I consider how it will affect the patient.



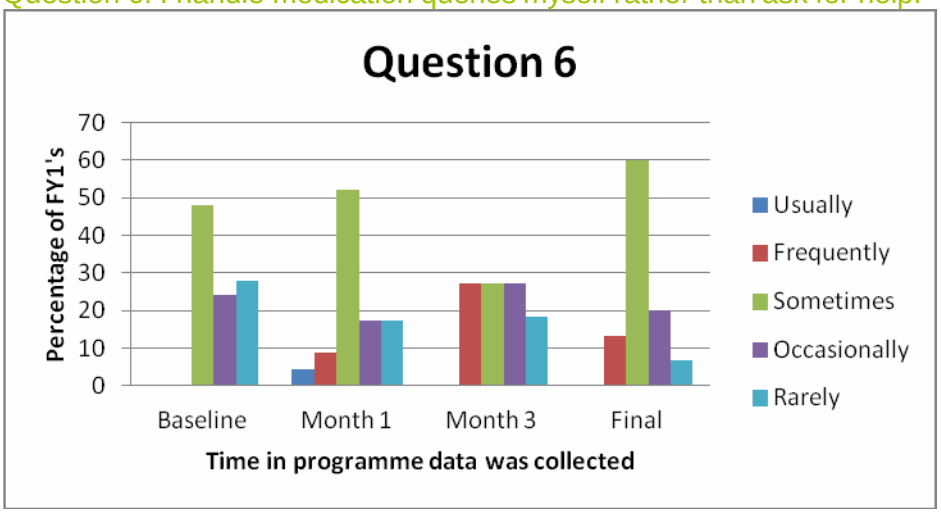
Question 4: I feel anxious or stressed when prescribing medication.



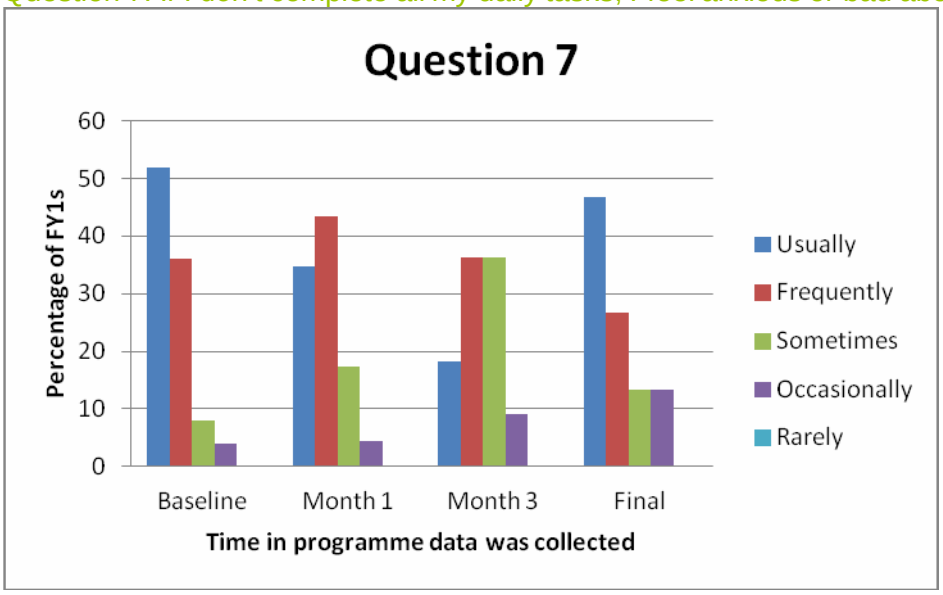
Question 5: I find it challenging to say “no” when someone asks me to prescribe something I’m unsure about.



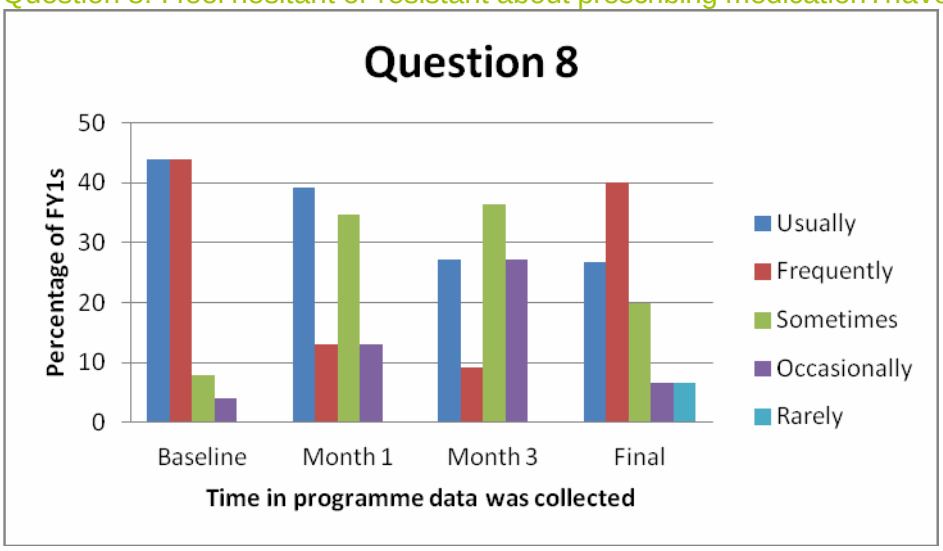
Question 6: I handle medication queries myself rather than ask for help.



Question 7: If I don't complete all my daily tasks, I feel anxious or bad about it.

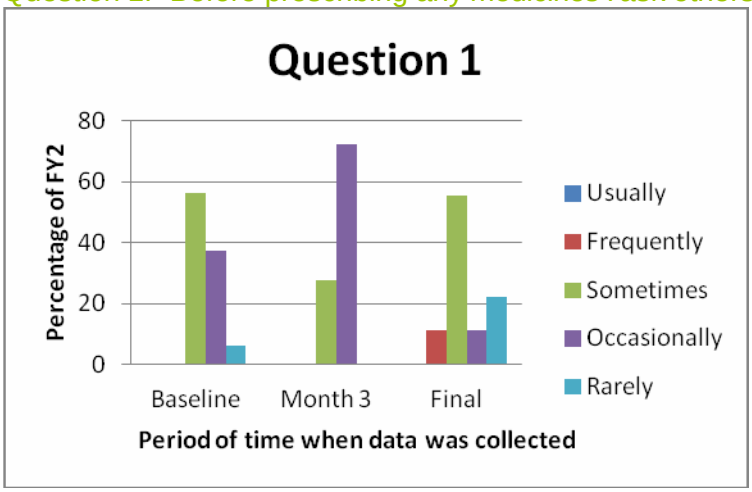


Question 8: I feel hesitant or resistant about prescribing medication I have not seen before.

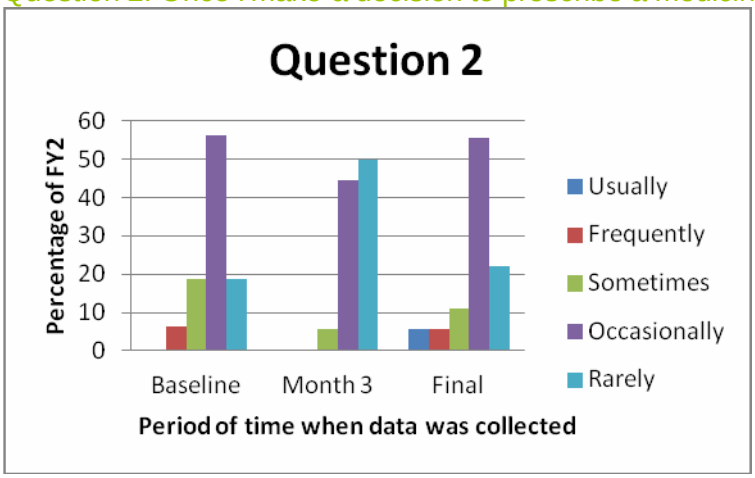


FY2 Confidence Assessment results

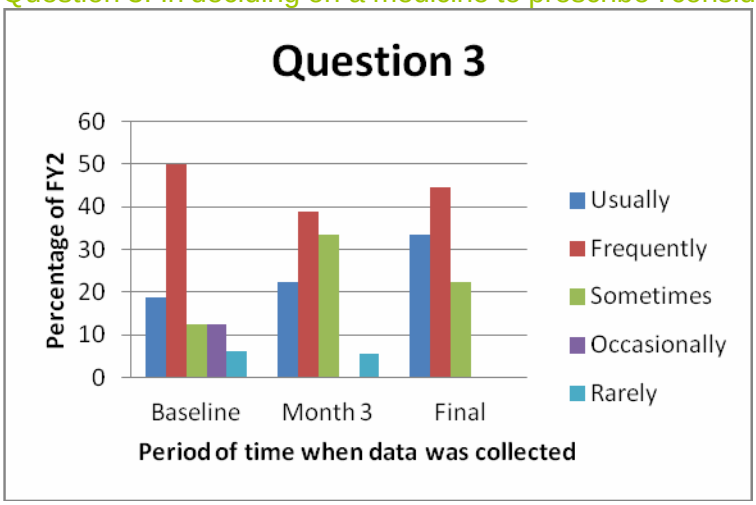
Question 1: Before prescribing any medicines I ask others for advice first.



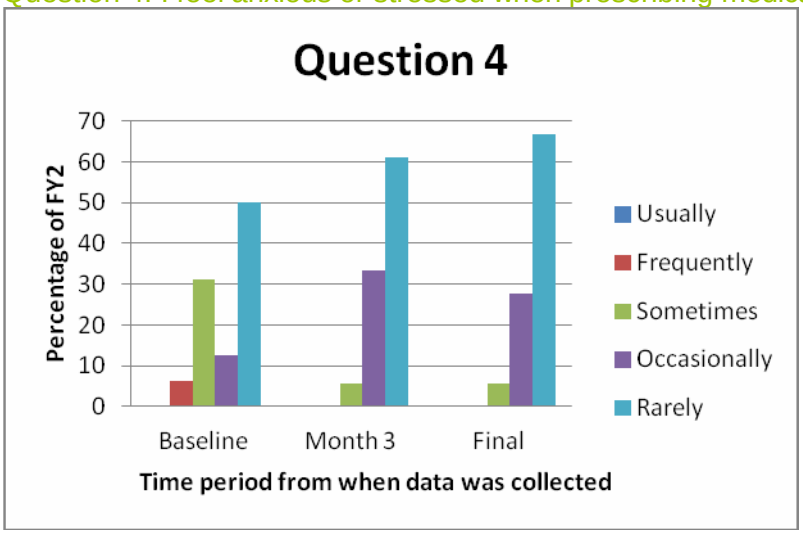
Question 2: Once I make a decision to prescribe a medicine, I wonder if it's the right one.



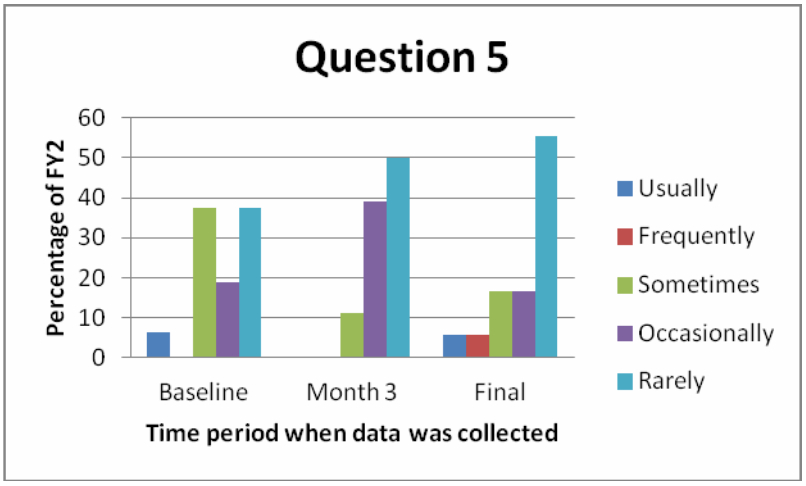
Question 3: In deciding on a medicine to prescribe I consider how it will affect the patient.



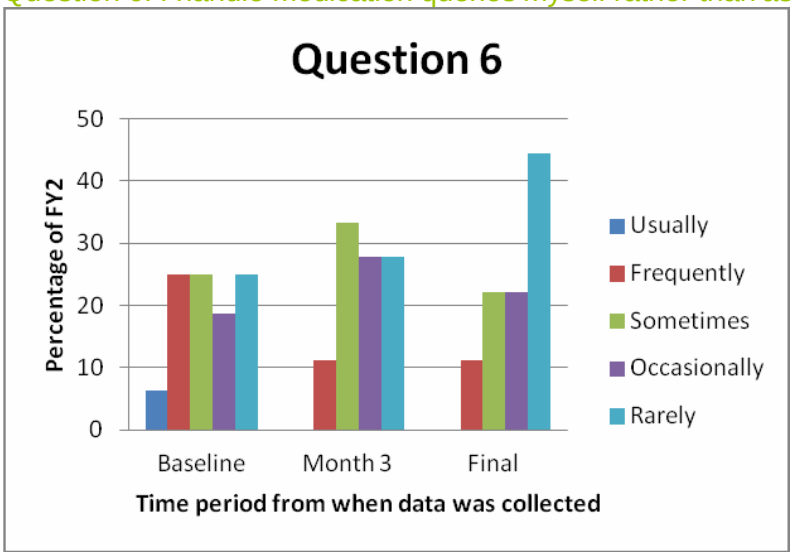
Question 4: I feel anxious or stressed when prescribing medication.



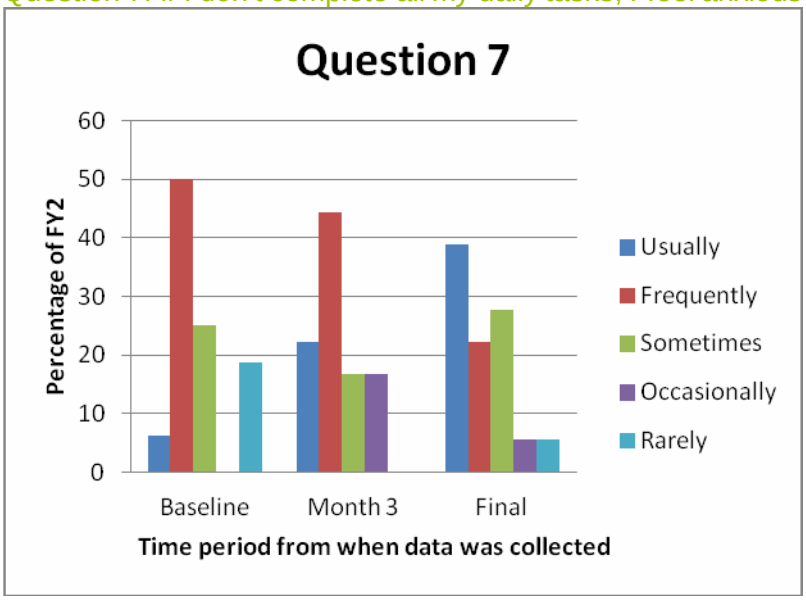
Question 5: I find it challenging to say “no” when someone asks me to prescribe something I’m unsure about.



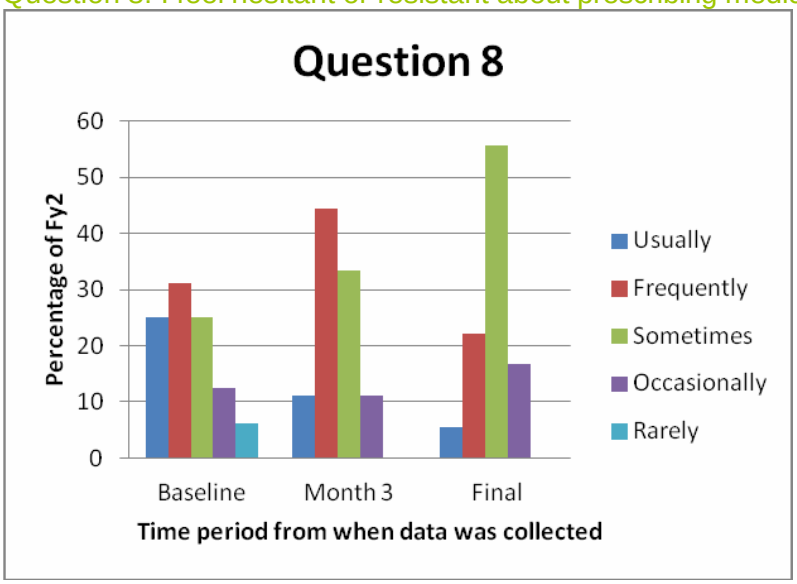
Question 6: I handle medication queries myself rather than ask for help.



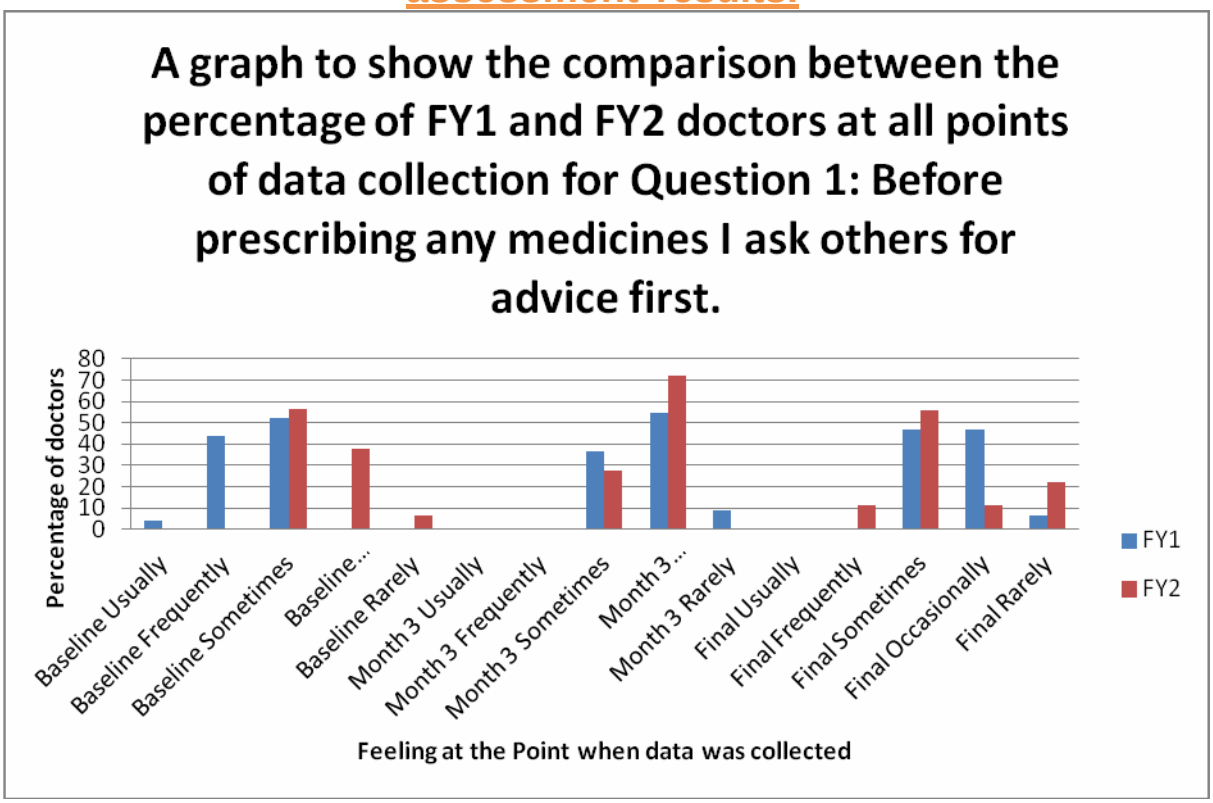
Question 7: If I don't complete all my daily tasks, I feel anxious or bad about it.

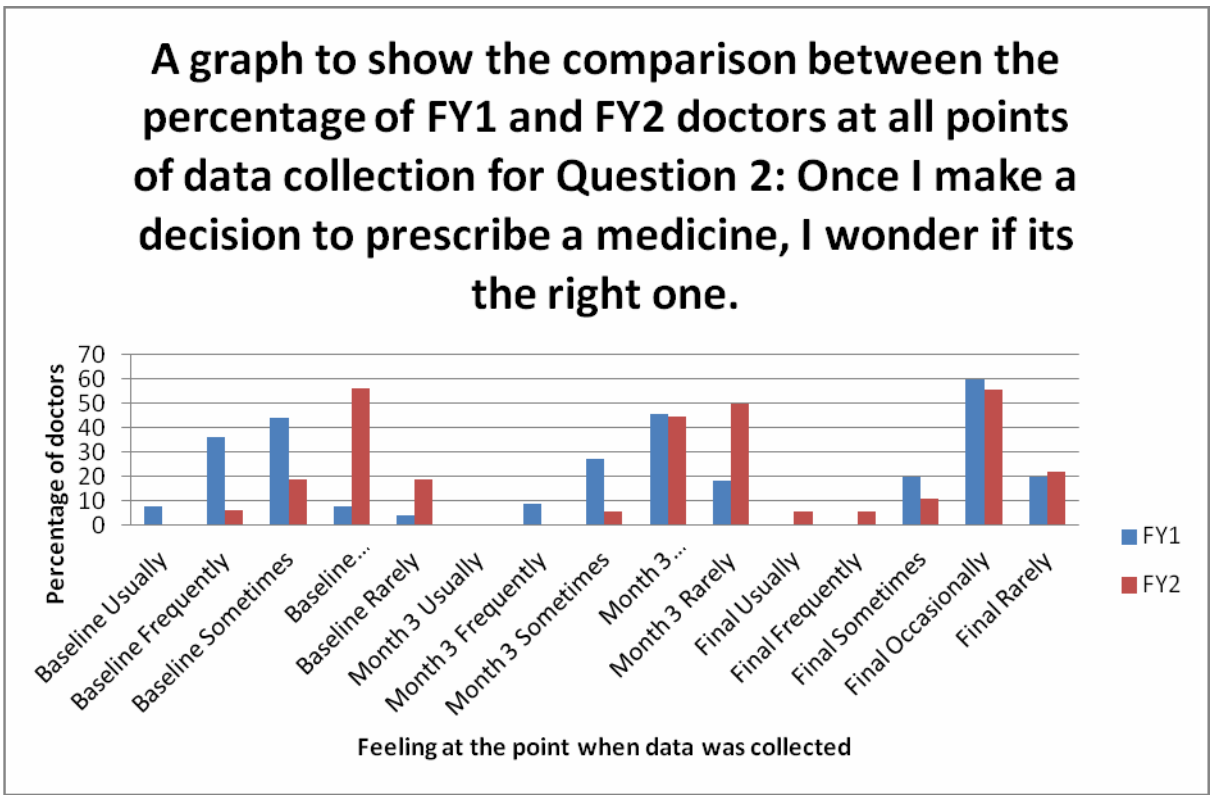


Question 8: I feel hesitant or resistant about prescribing medication I have not seen before.

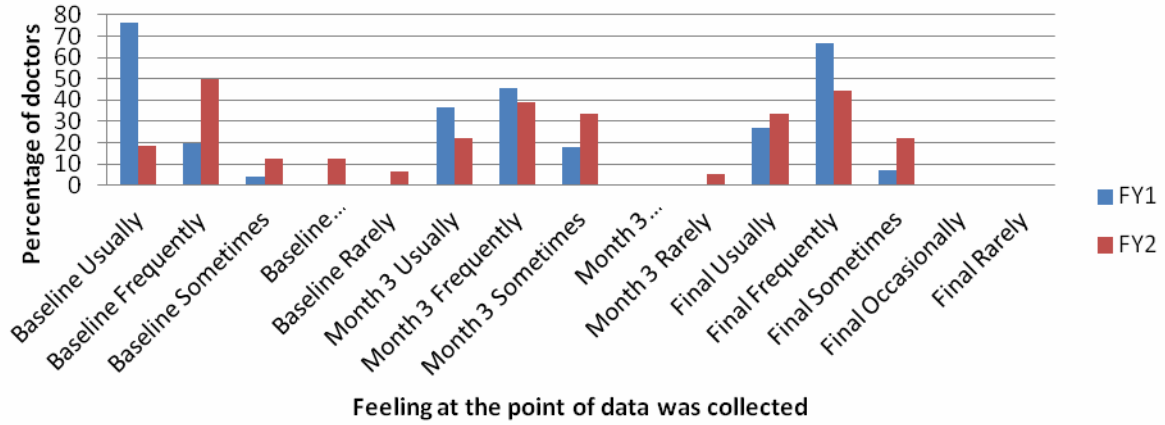


Appendix 3: Comparison of FY1 and FY2 confidence assessment results.

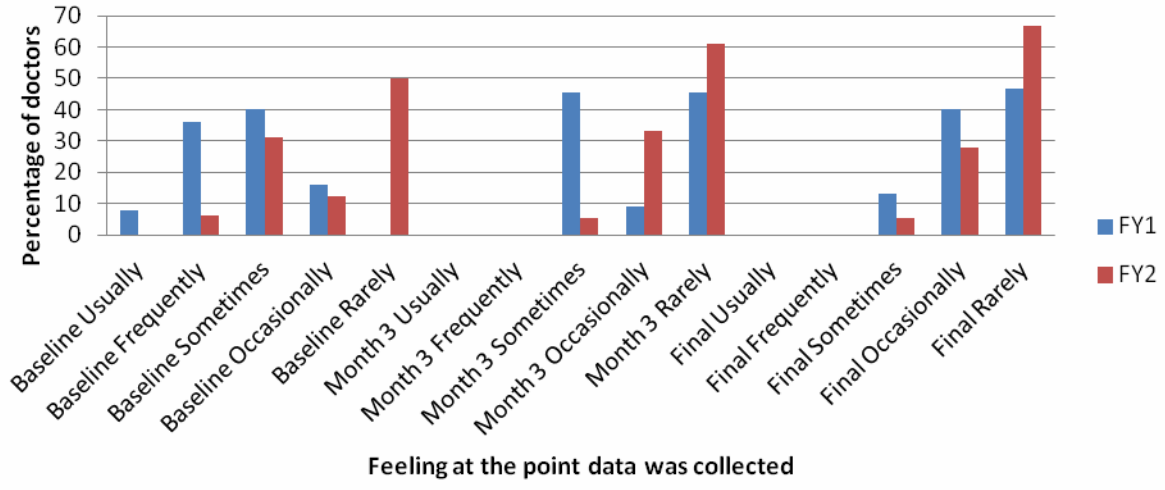


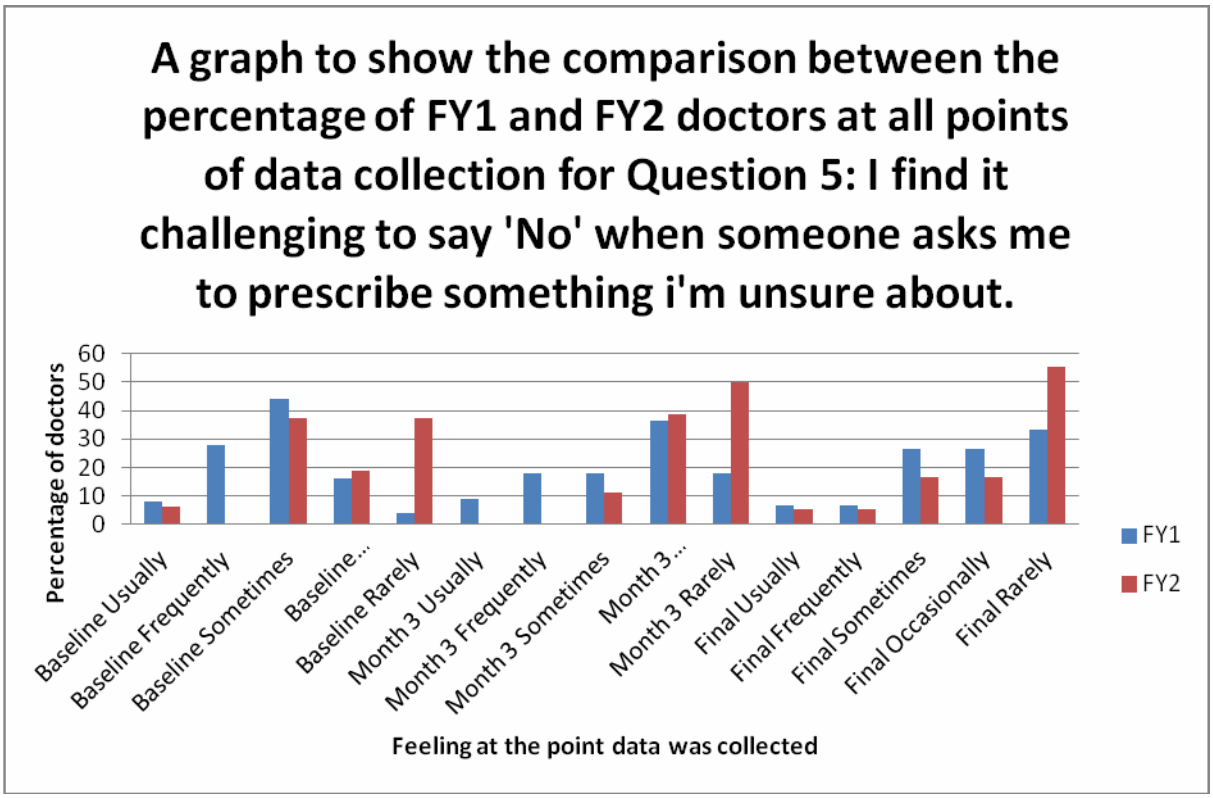


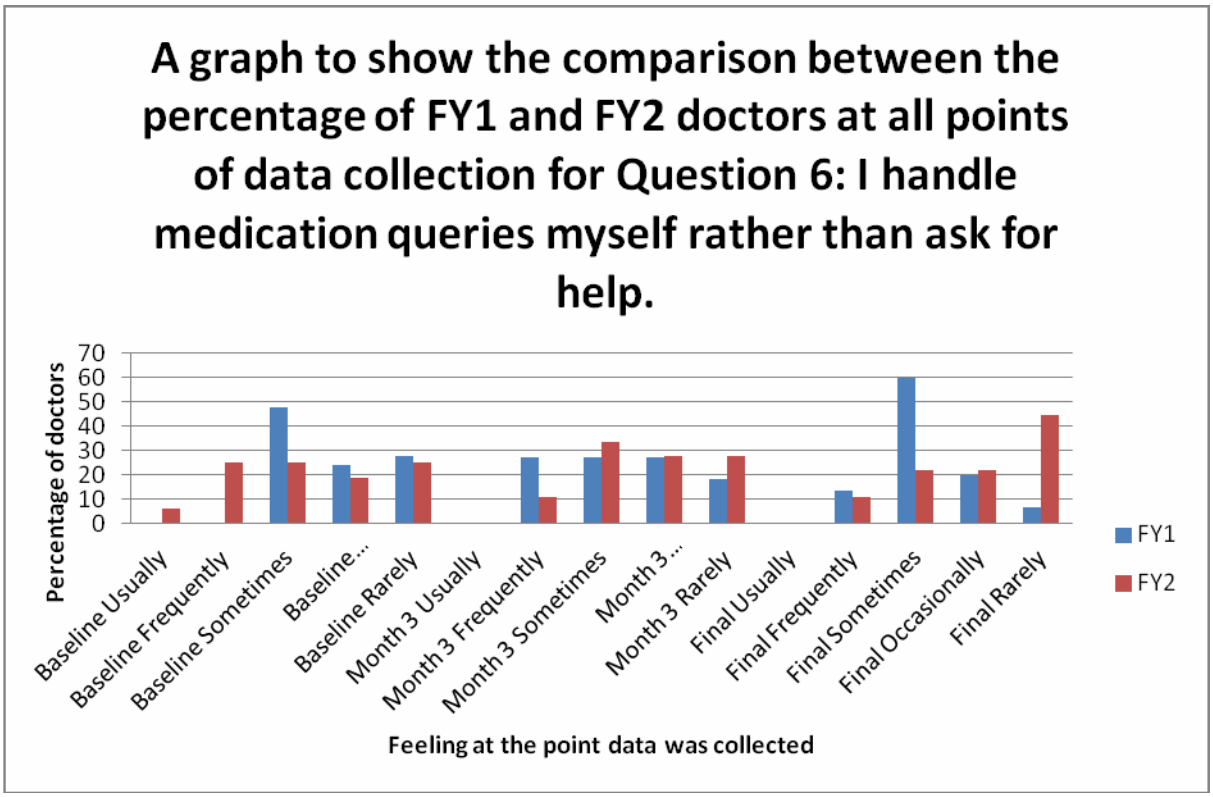
A graph to show the comparison between the percentage of FY1 and FY2 doctors at all points of data collection for Question 3: In deciding on a medicine to prescribe I consider how it will affect the patient.



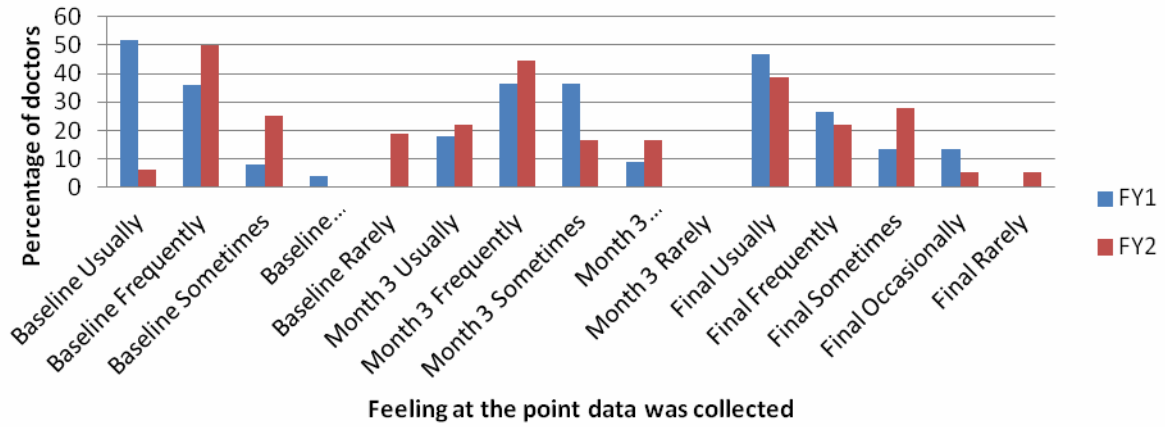
A graph to show the comparison between the percentage of FY1 and FY2 doctors at all points of data collection for Question 4: I feel anxious or stressed when prescribing medication.



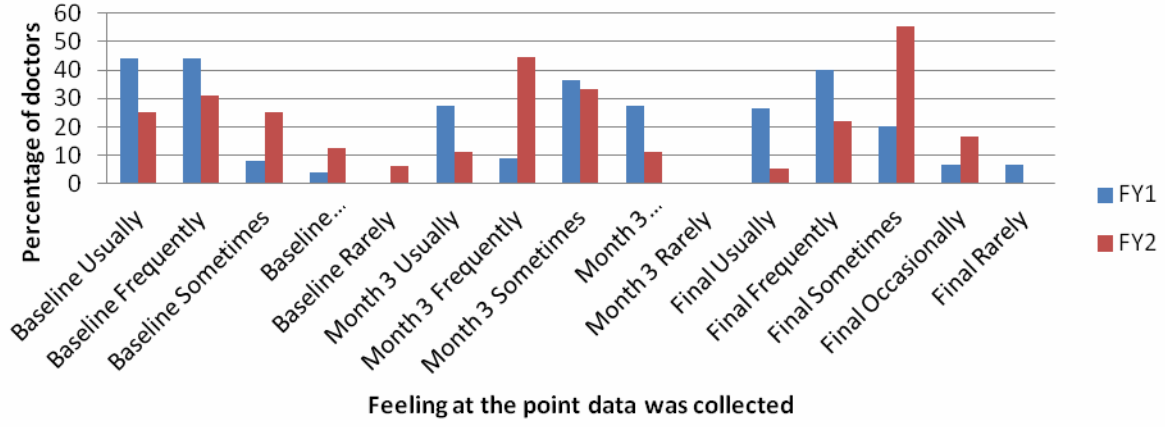

A graph to show the comparison between the percentage of FY1 and FY2 doctors at all points of data collection for Question 5: I find it challenging to say 'No' when someone asks me to prescribe something i'm unsure about.
Percentage of doctors
60
50
40
30
20
10
0
Baseline Usually
Baseline Frequently
Baseline Sometimes
Baseline...
Baseline Rarely
Month 3 Usually
Month 3 Frequently
Month 3 Sometimes
Month 3...
Month 3 Rarely
Final Usually
Final Frequently
Final Sometimes
Final Occasionally
Final Rarely
FY1
FY2
Feeling at the point data was collected


A graph to show the comparison between the percentage of FY1 and FY2 doctors at all points of data collection for Question 6: I handle medication queries myself rather than ask for help.
Percentage of doctors
70
60
50
40
30
20
10
0
Baseline Usually
Baseline Frequently
Baseline Sometimes
Baseline...
Baseline Rarely
Month 3 Usually
Month 3 Frequently
Month 3 Sometimes
Month 3...
Month 3 Rarely
Final Usually
Final Frequently
Final Sometimes
Final Occasionally
Final Rarely
FY1
FY2
Feeling at the point data was collected

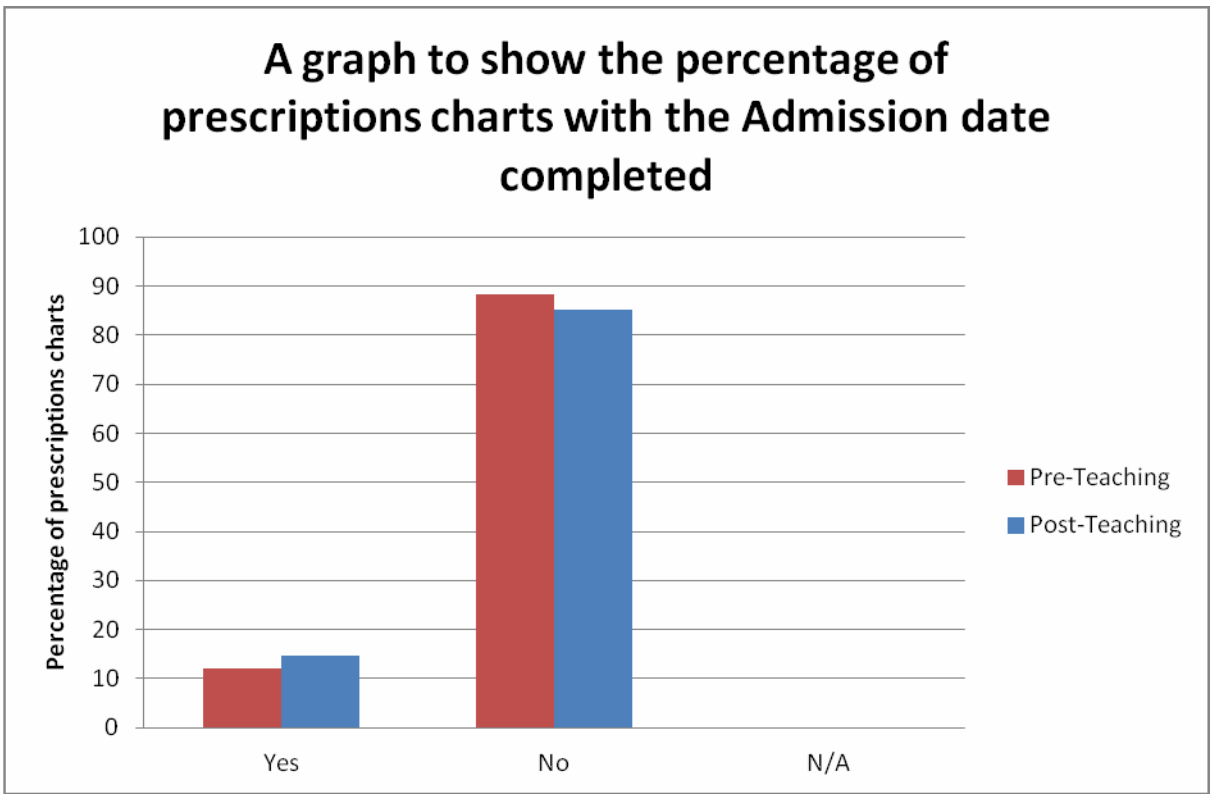
A graph to show the comparison between the percentage of FY1 and FY2 doctors at all points of data collection for Question 7: If I don't complete all my daily tasks, I feel anxious or bad about it.

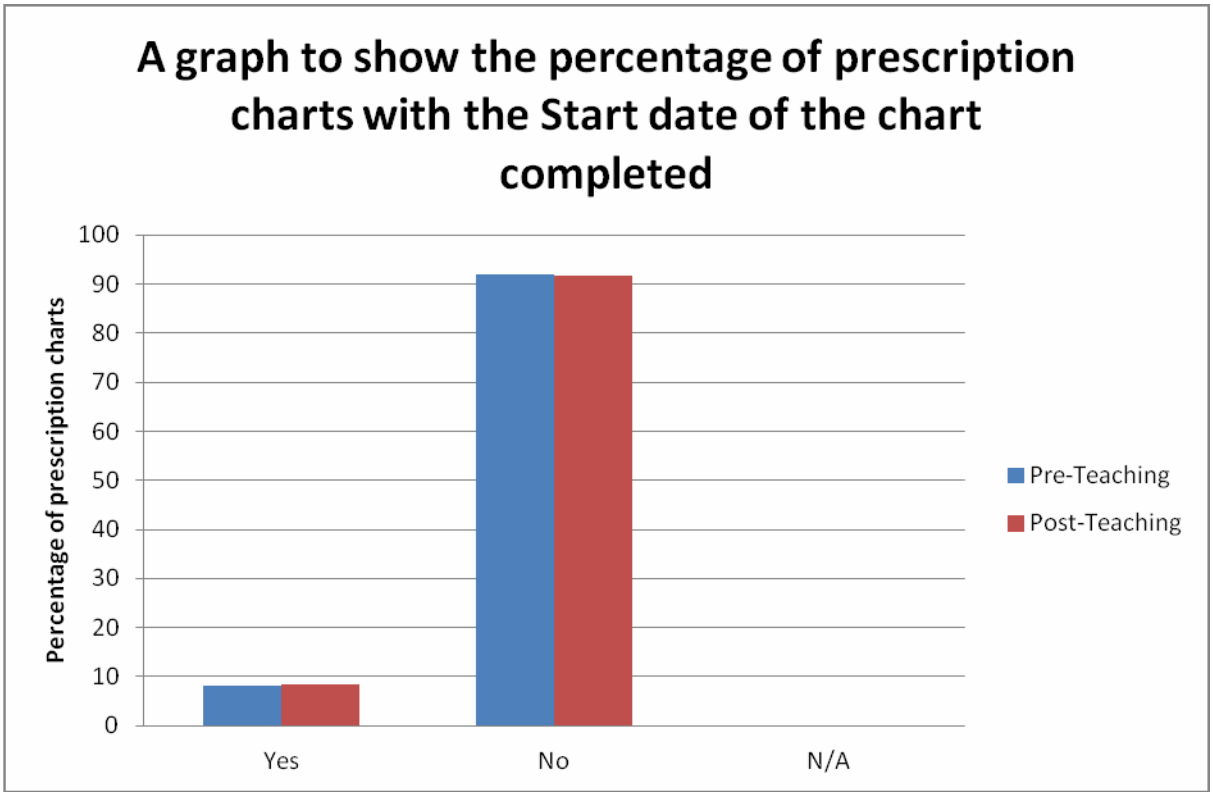


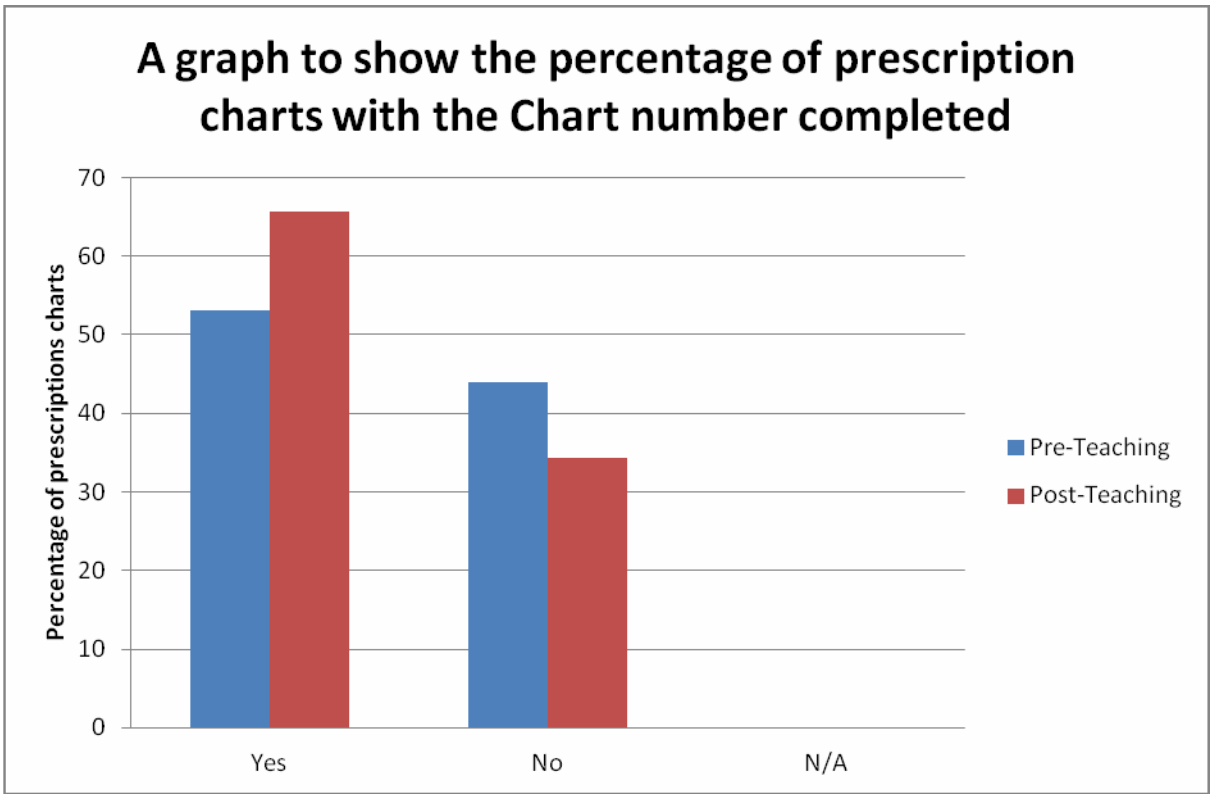
A graph to show the comparison between the percentage of FY1 and FY2 doctors at all points of data collection for Question 8: I feel hesitant or resistant about prescribing medication I have not seen before.

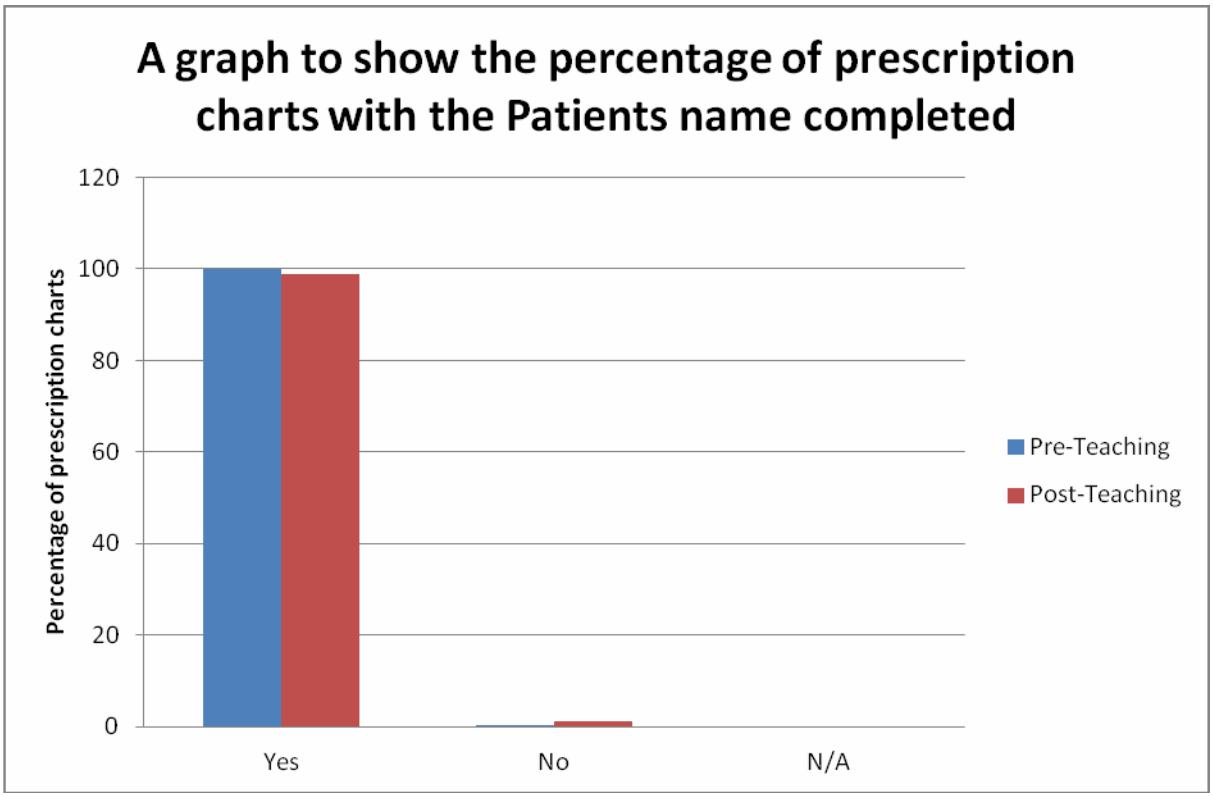


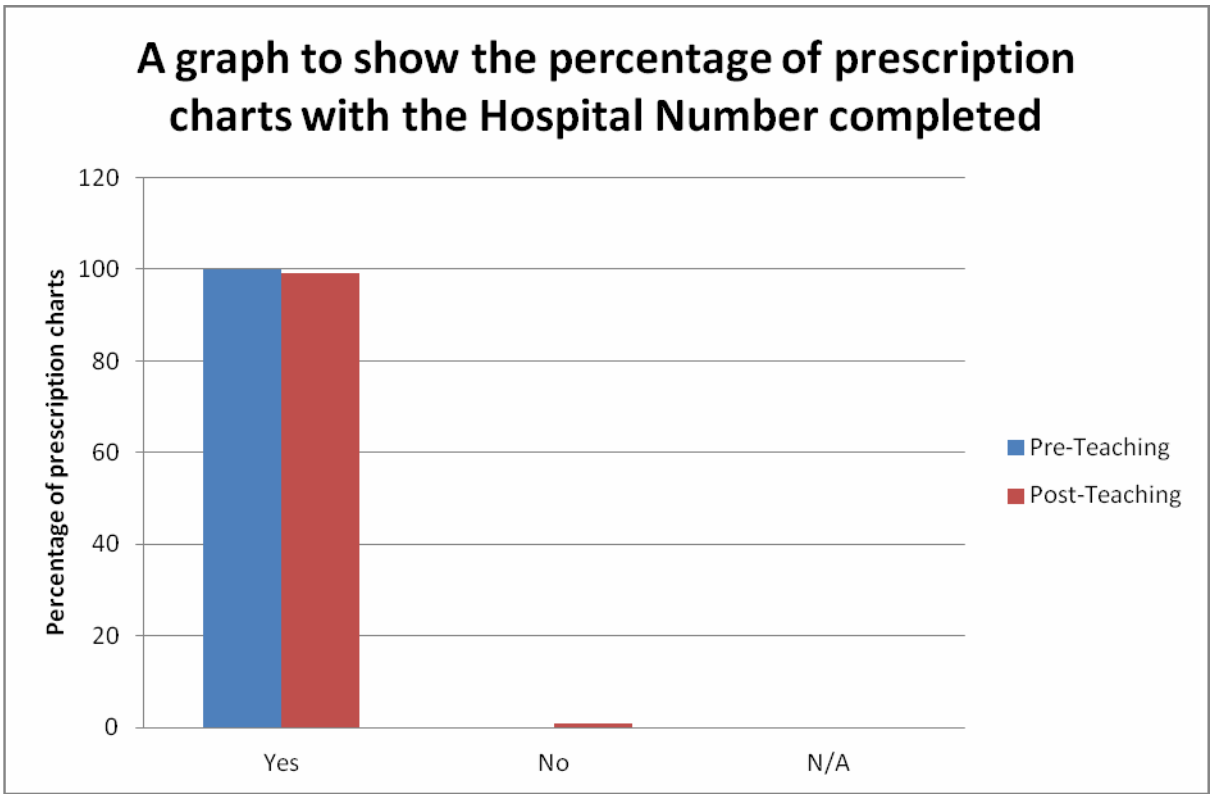
Appendix 4: Graphs to show the general 'housekeeping' of the prescription charts pre-teaching and post-teaching.

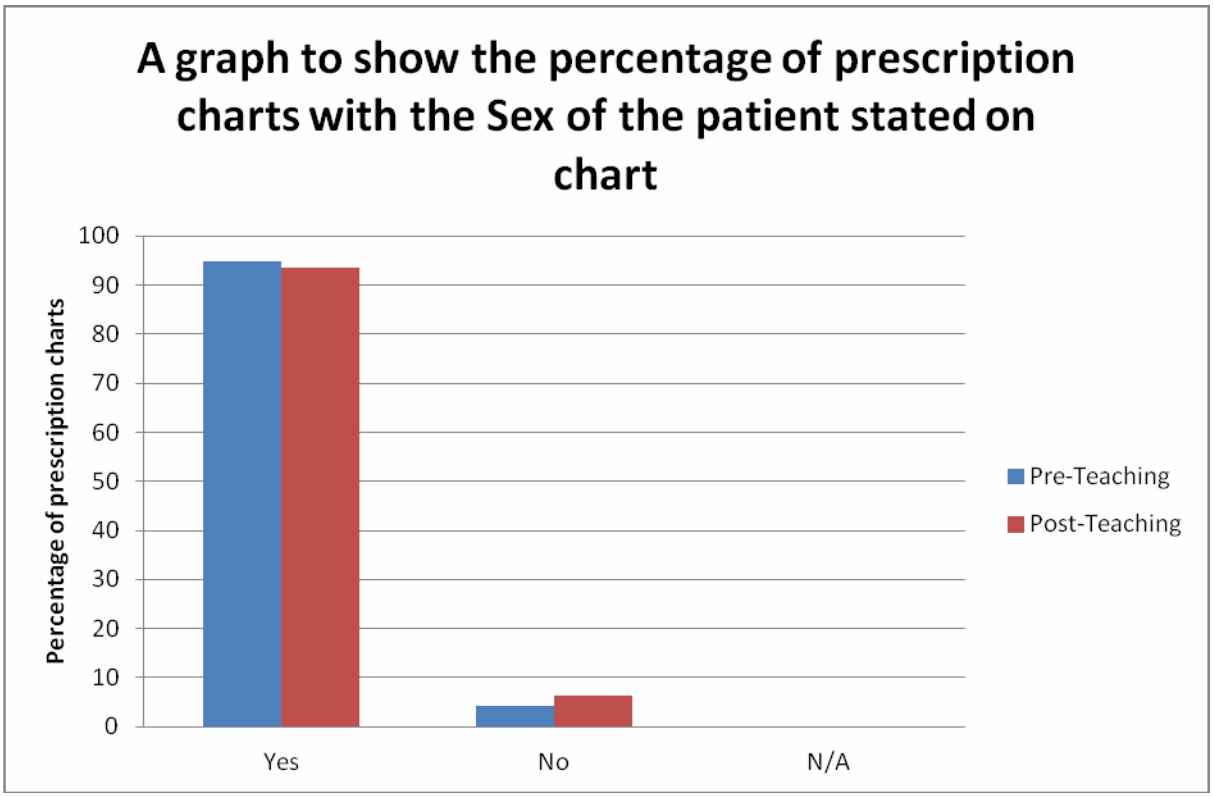


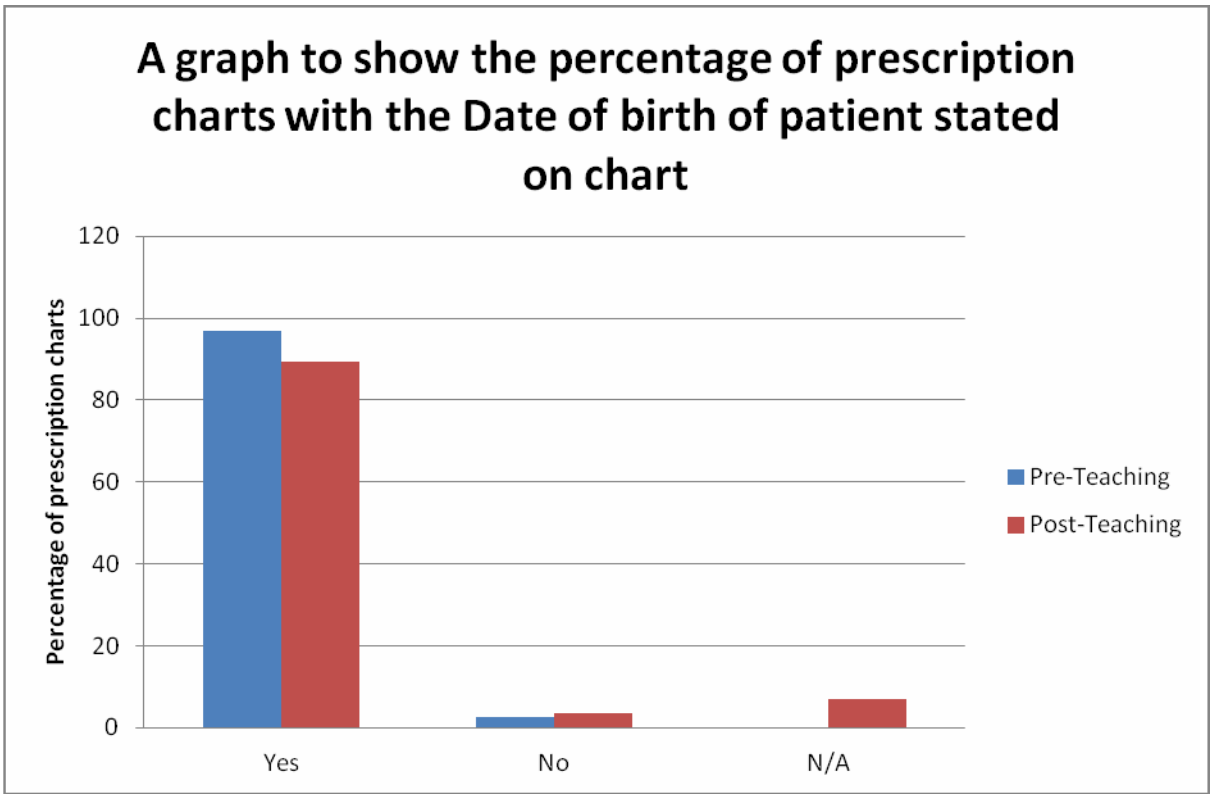


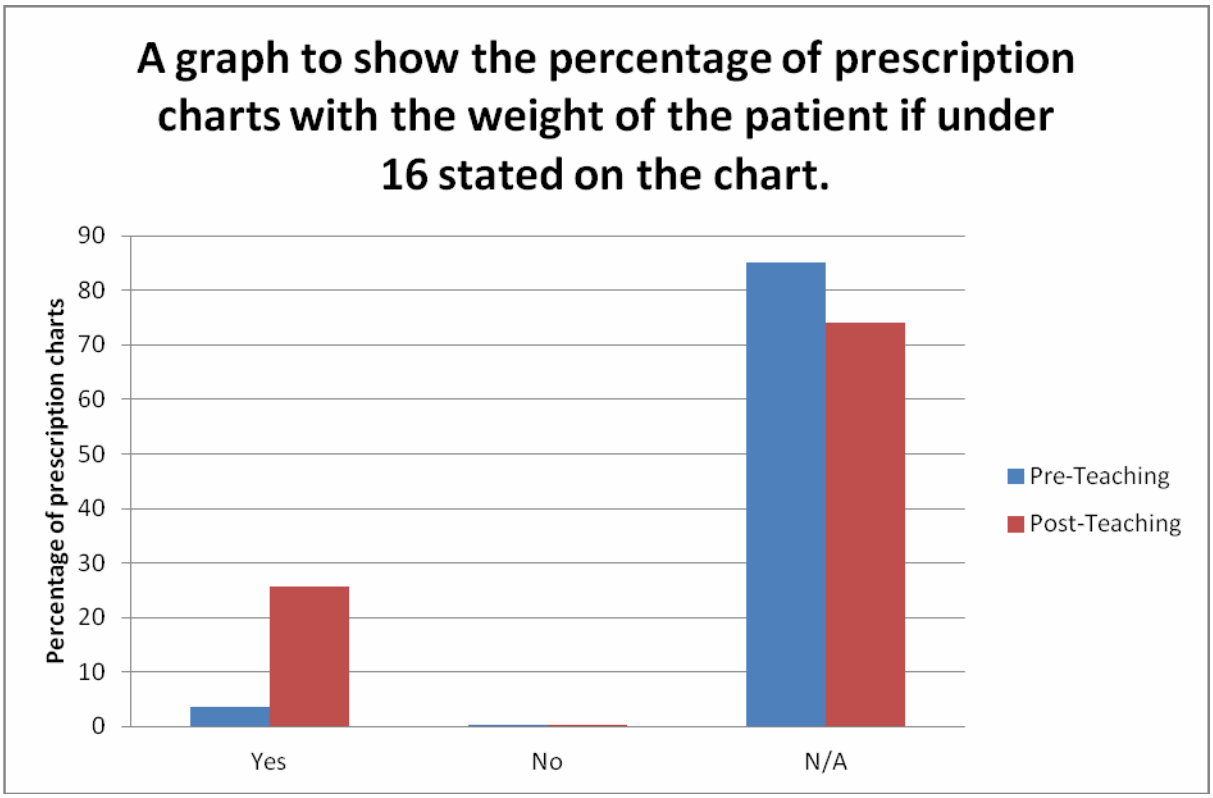

A graph to show the percentage of prescription charts with the Chart number completed
Percentage of prescriptions charts
70
60
50
40
30
20
10
0
Yes
No
N/A
Pre-Teaching
Post-Teaching

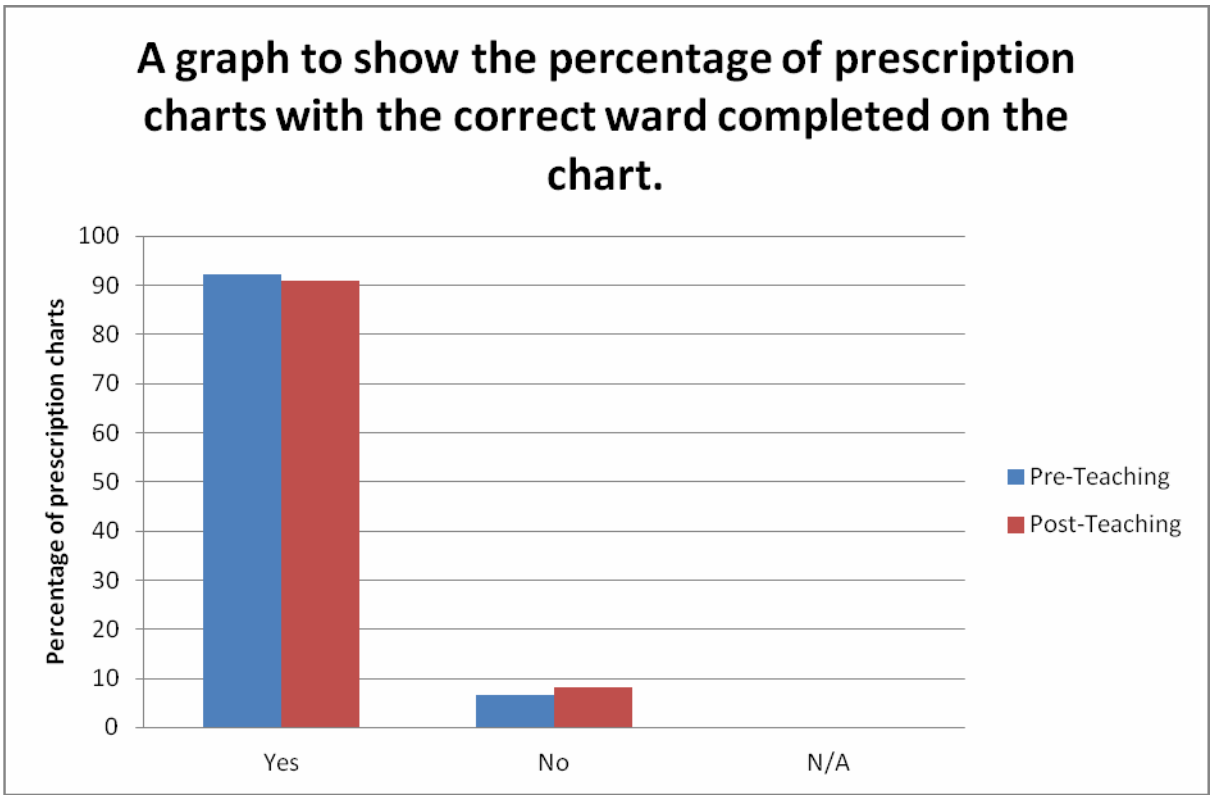

A graph to show the percentage of prescription charts with the Patients name completed
Percentage of prescription charts
120
100
80
60
40
20
0
Yes
No
N/A
Pre-Teaching
Post-Teaching

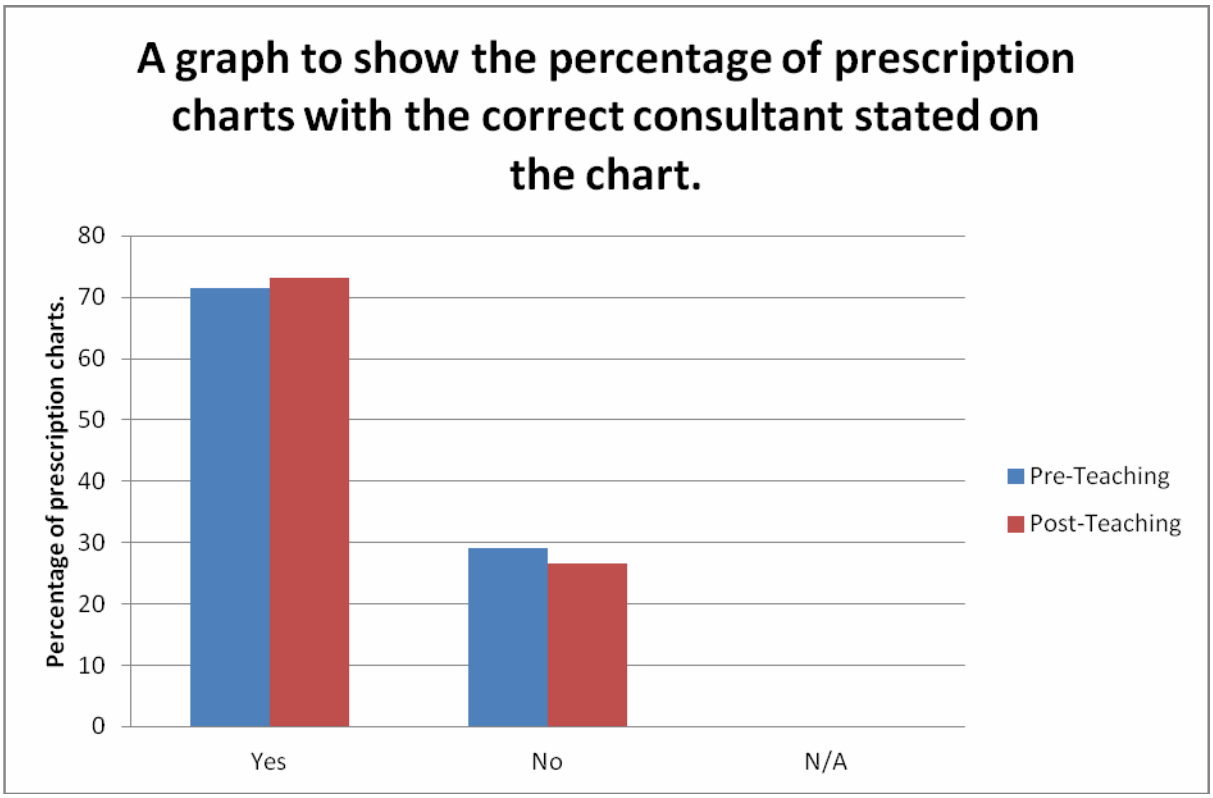

A graph to show the percentage of prescription charts with the Hospital Number completed
Percentage of prescription charts
120
100
80
60
40
20
0
Yes
No
N/A
Pre-Teaching
Post-Teaching

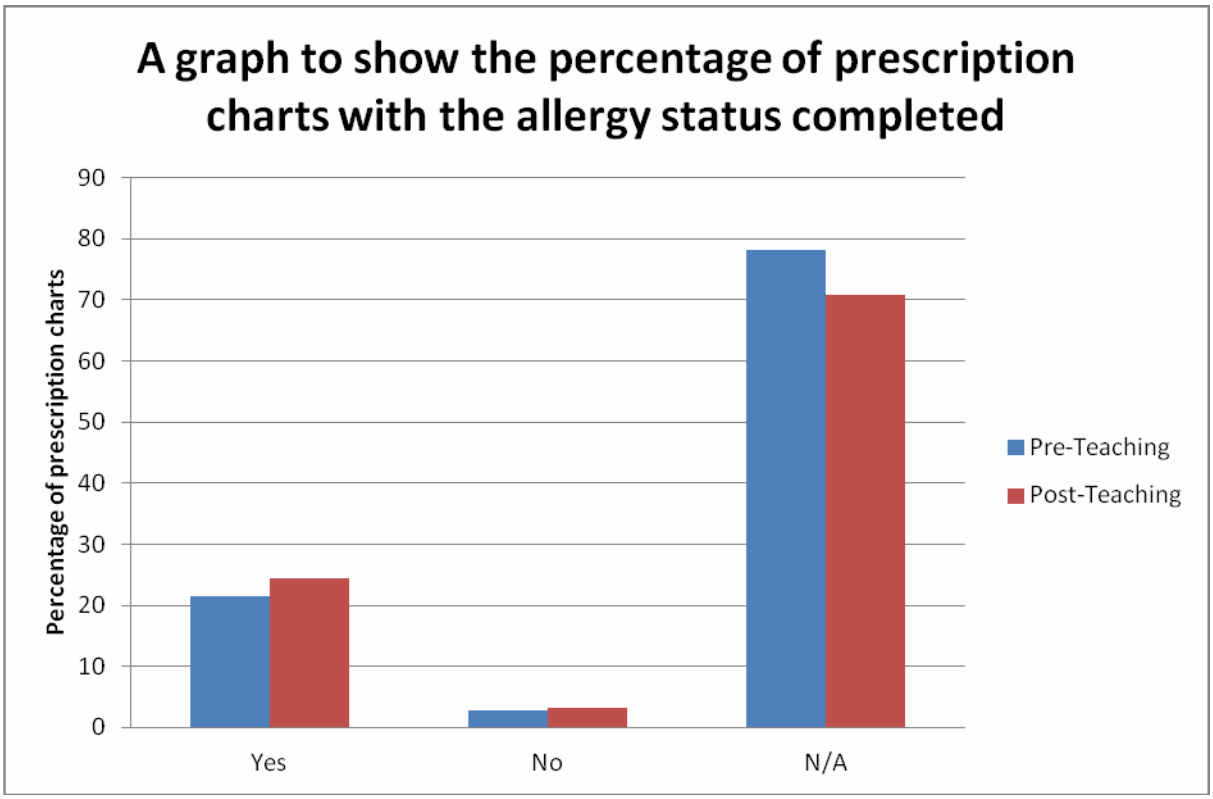

A graph to show the percentage of prescription charts with the Sex of the patient stated on chart
Percentage of prescription charts
100
90
80
70
60
50
40
30
20
10
0
Yes
No
N/A
Pre-Teaching
Post-Teaching

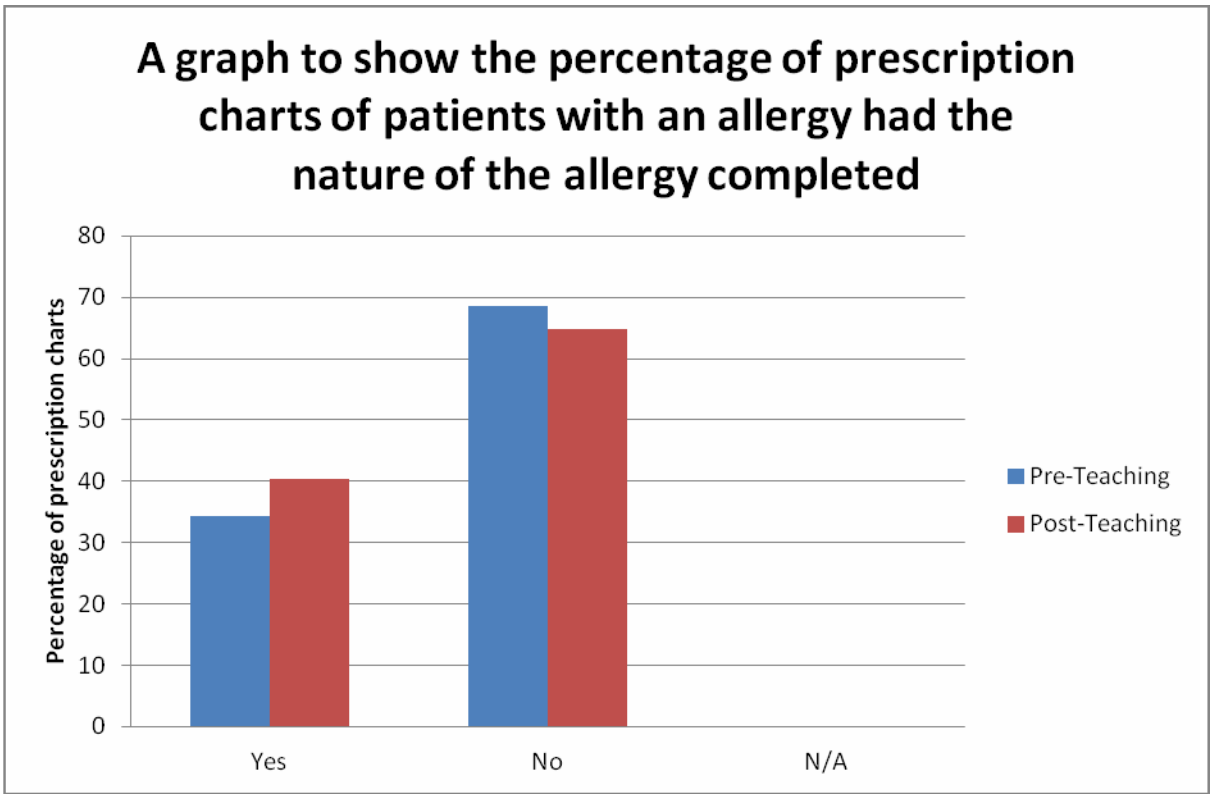

A graph to show the percentage of prescription charts with the Date of birth of patient stated on chart
Percentage of prescription charts
120
100
80
60
40
20
0
Yes
No
N/A
Pre-Teaching
Post-Teaching

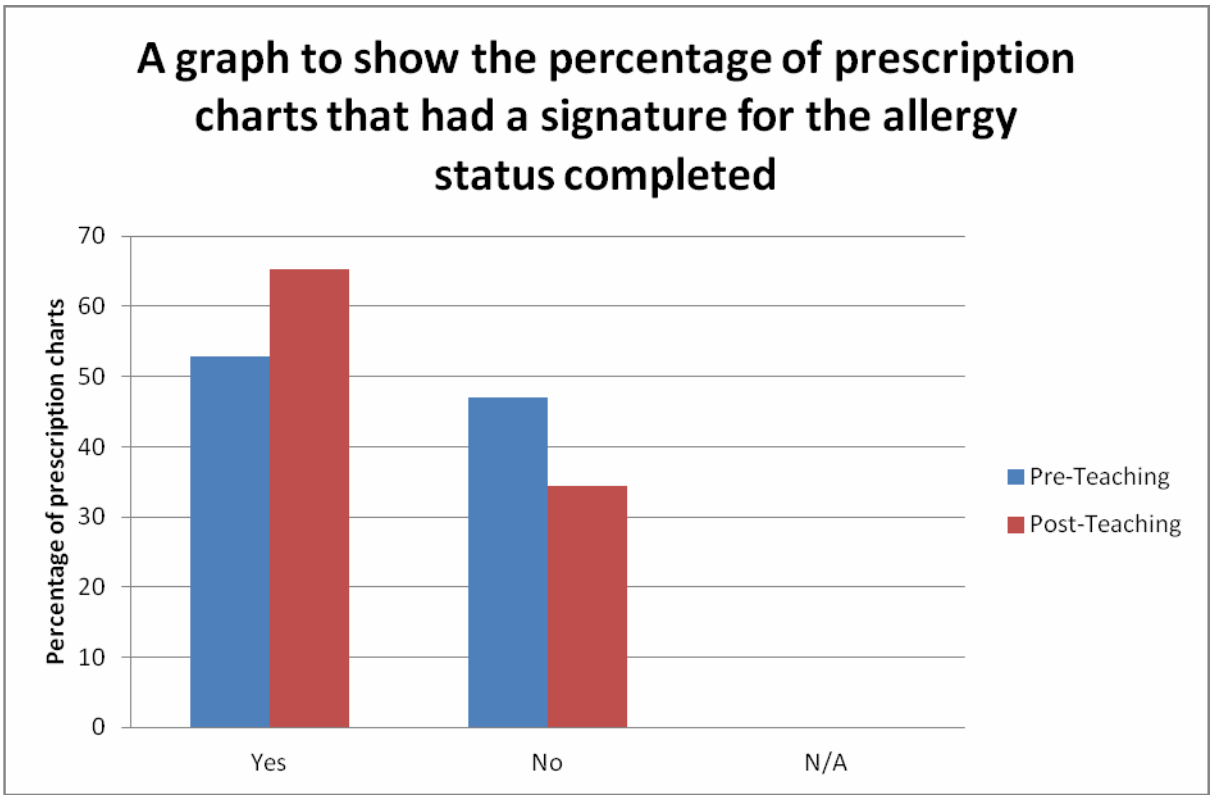

A graph to show the percentage of prescription charts with the weight of the patient if under 16 stated on the chart.
Percentage of prescription charts
90
80
70
60
50
40
30
20
10
0
Yes
No
N/A
Pre-Teaching
Post-Teaching

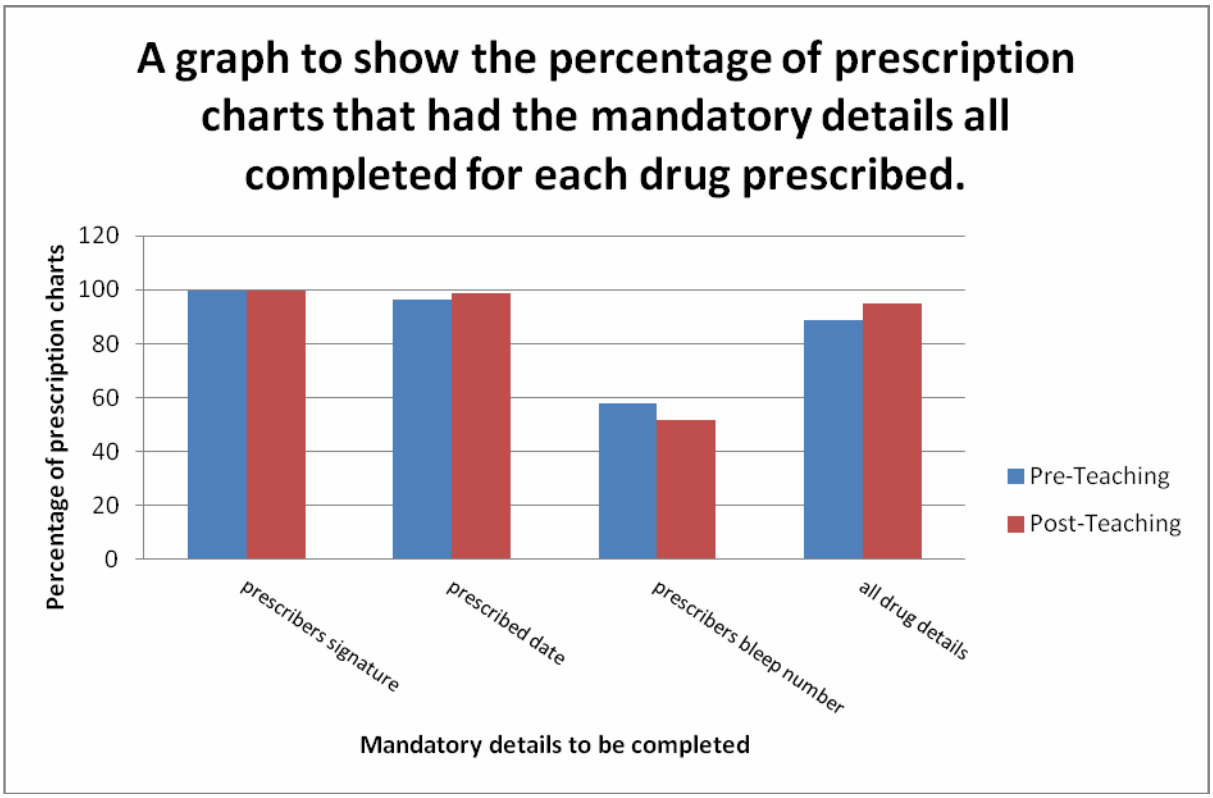

A graph to show the percentage of prescription charts with the correct ward completed on the chart.
Percentage of prescription charts
100
90
80
70
60
50
40
30
20
10
0
Yes
No
N/A
Pre-Teaching
Post-Teaching


A graph to show the percentage of prescription charts with the correct consultant stated on the chart.
Percentage of prescription charts.
80
70
60
50
40
30
20
10
0
Yes
No
N/A
Pre-Teaching
Post-Teaching


A graph to show the percentage of prescription charts with the allergy status completed
Percentage of prescription charts
90
80
70
60
50
40
30
20
10
0
Yes
No
N/A
Pre-Teaching
Post-Teaching


A graph to show the percentage of prescription charts of patients with an allergy had the nature of the allergy completed
Percentage of prescription charts
80
70
60
50
40
30
20
10
0
Yes
No
N/A
Pre-Teaching
Post-Teaching


A graph to show the percentage of prescription charts that had a signature for the allergy status completed
Percentage of prescription charts
70
60
50
40
30
20
10
0
Yes
No
N/A
Pre-Teaching
Post-Teaching

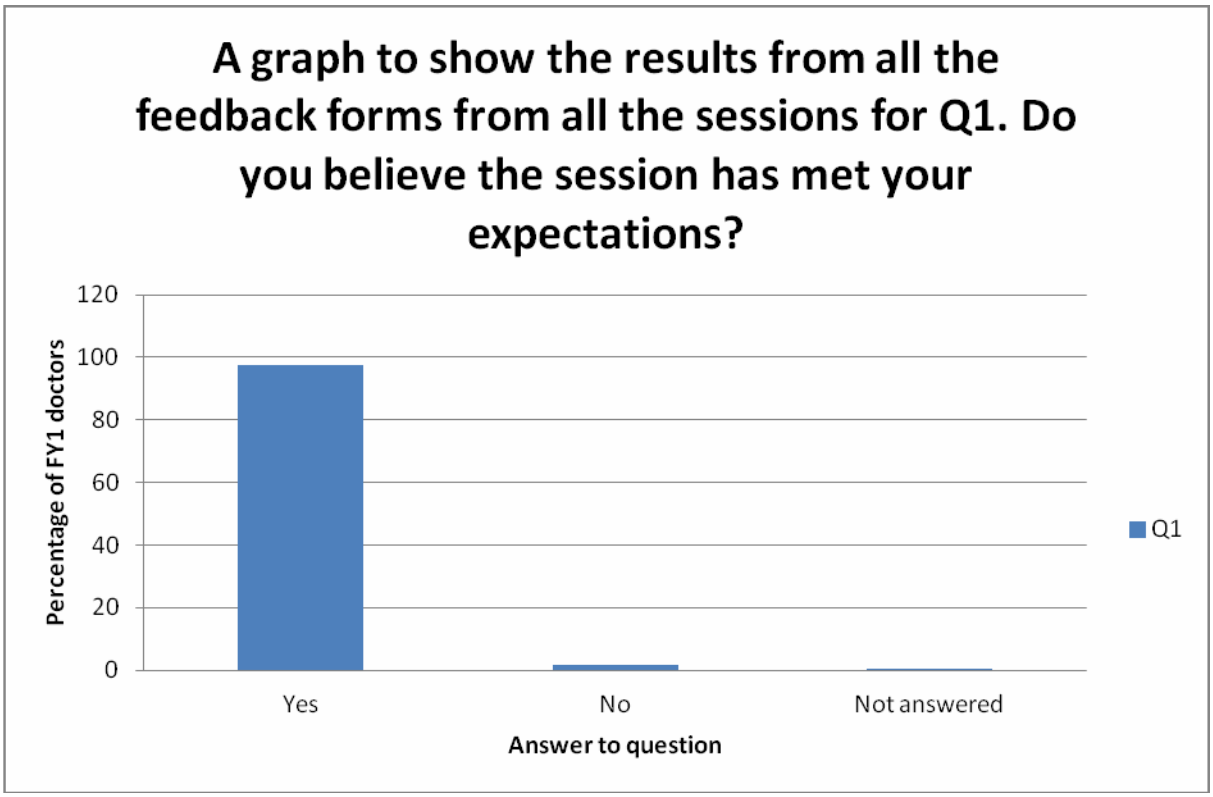

A graph to show the percentage of prescription charts that had the mandatory details all completed for each drug prescribed.
Percentage of prescription charts
120
100
80
60
40
20
0
prescribers signature
prescribed date
prescribers bleep number
all drug details
Mandatory details to be completed
Pre-Teaching
Post-Teaching

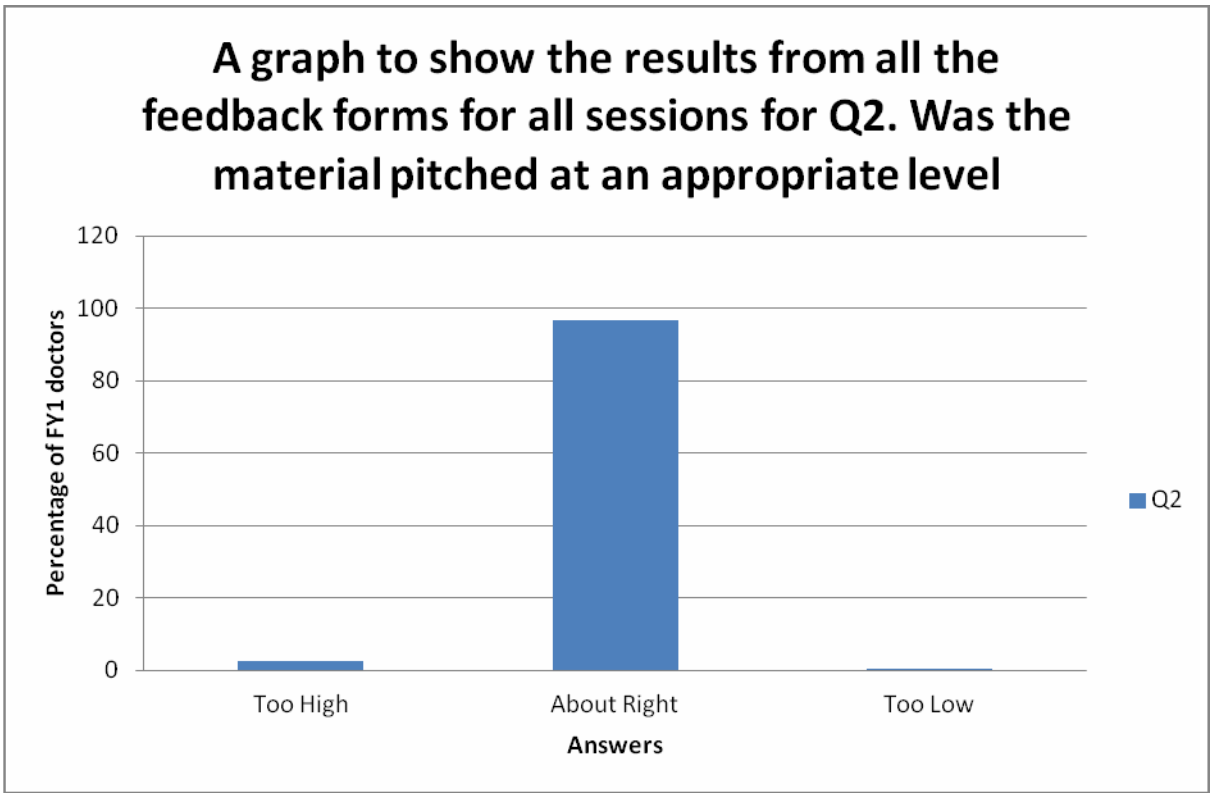
Appendix 5 – Audit for Insulin Prescribing

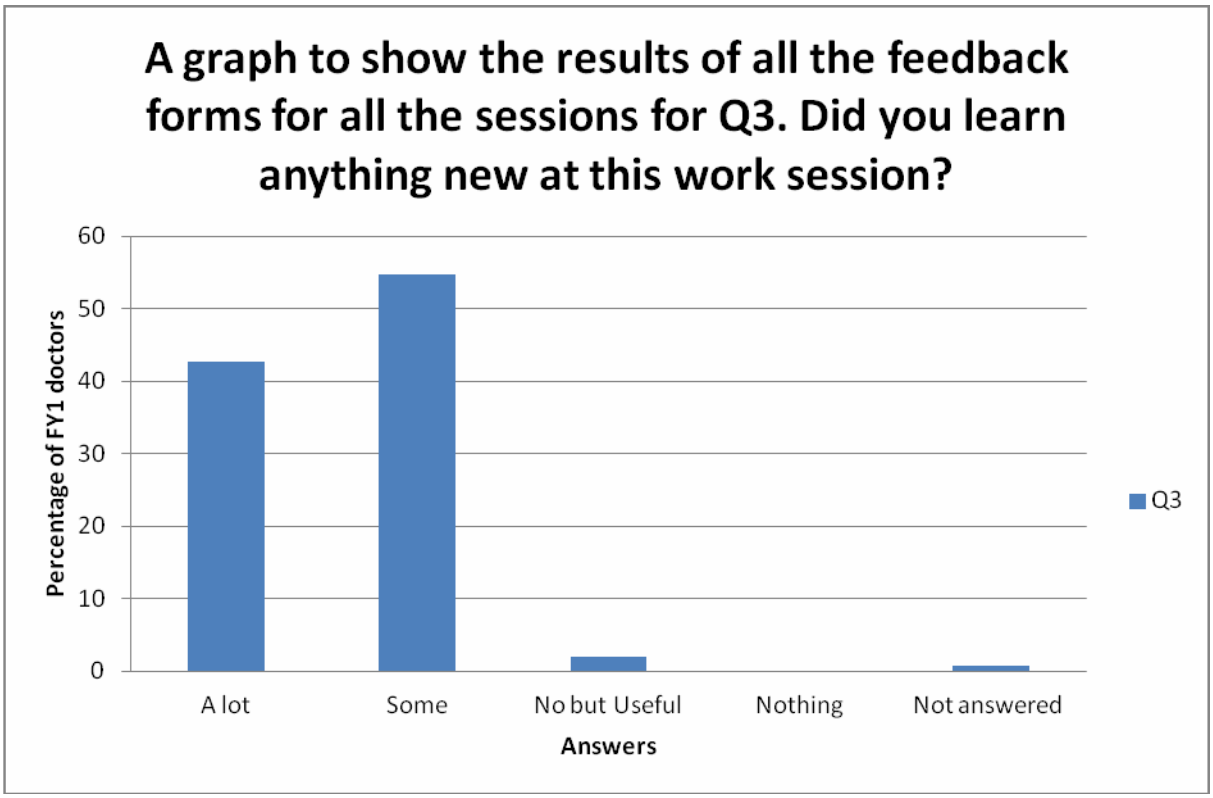
Audit Criteria (Standard Statements)	Target	Exceptions	2010 Audit Result	2011 Audit Result	May 2012 Audit Result	Dec 2012 Audit Result	July 2013 Audit Result
Regular SC insulin is written in the correct section of the chart*	100%	Old drug chart		82%	88%	100%	100%
The term "Units" is written in full (no use of U, IU etc.)	100%	None	97%	96%	90%	100%	100%
Full insulin name is stated (no abbreviations)	100%	None	94%	93%	91%	68%	100%
All alterations have been made correctly	100%	None	62%	96%	78%	89%	100%
Insulin device is specified	100%	Pharmacy endorsement	26%	57%	25%	79%	100%
% recorded by doctor							62%
% recorded by pharmacy team							38%
Missed doses							16%
Nurse has stated the number of units administered*	100%	Old drug charts		89%	91%	100%	98%
Nurse has stated time of administration*	100%	Old drug charts		83%	96%	95%	98%
% of patients self administering	n/a						38%
Prescriber legible						37%	41%
Prescriber stamp used						37%	10%

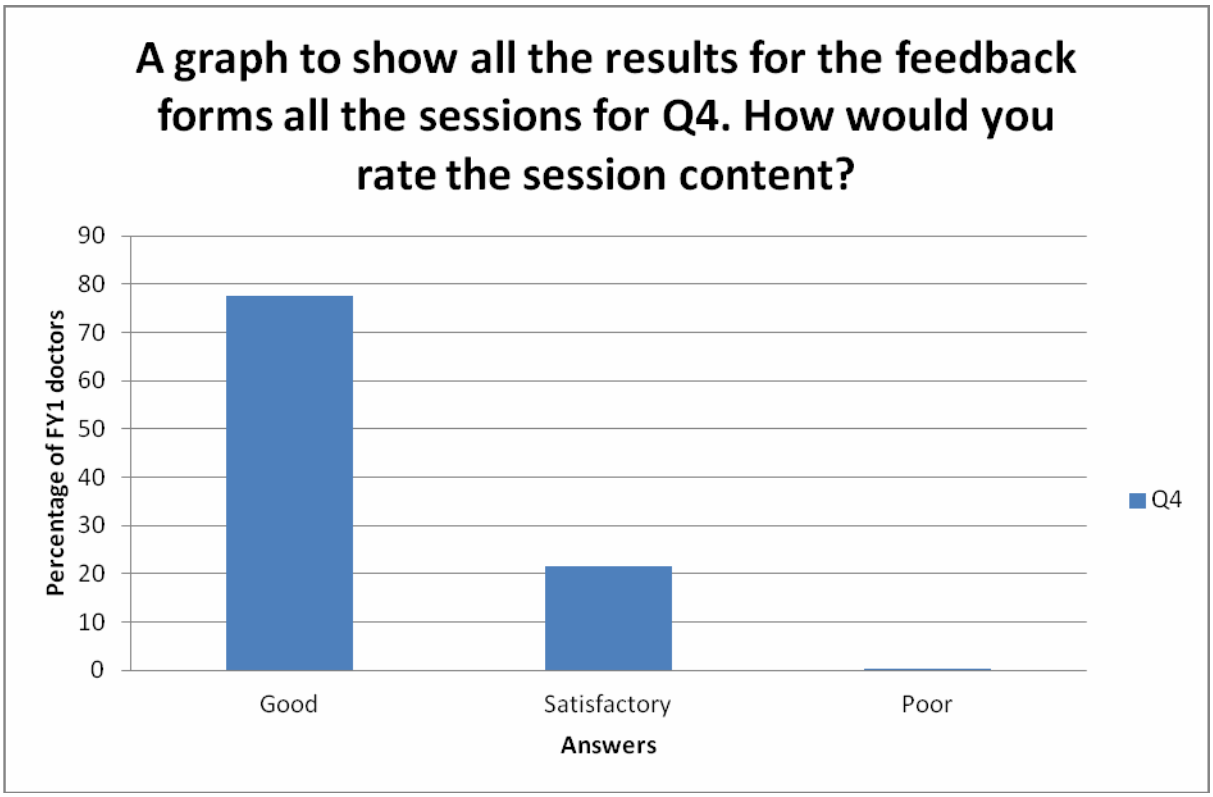
Appendix 6 : Assessment of feedback forms.

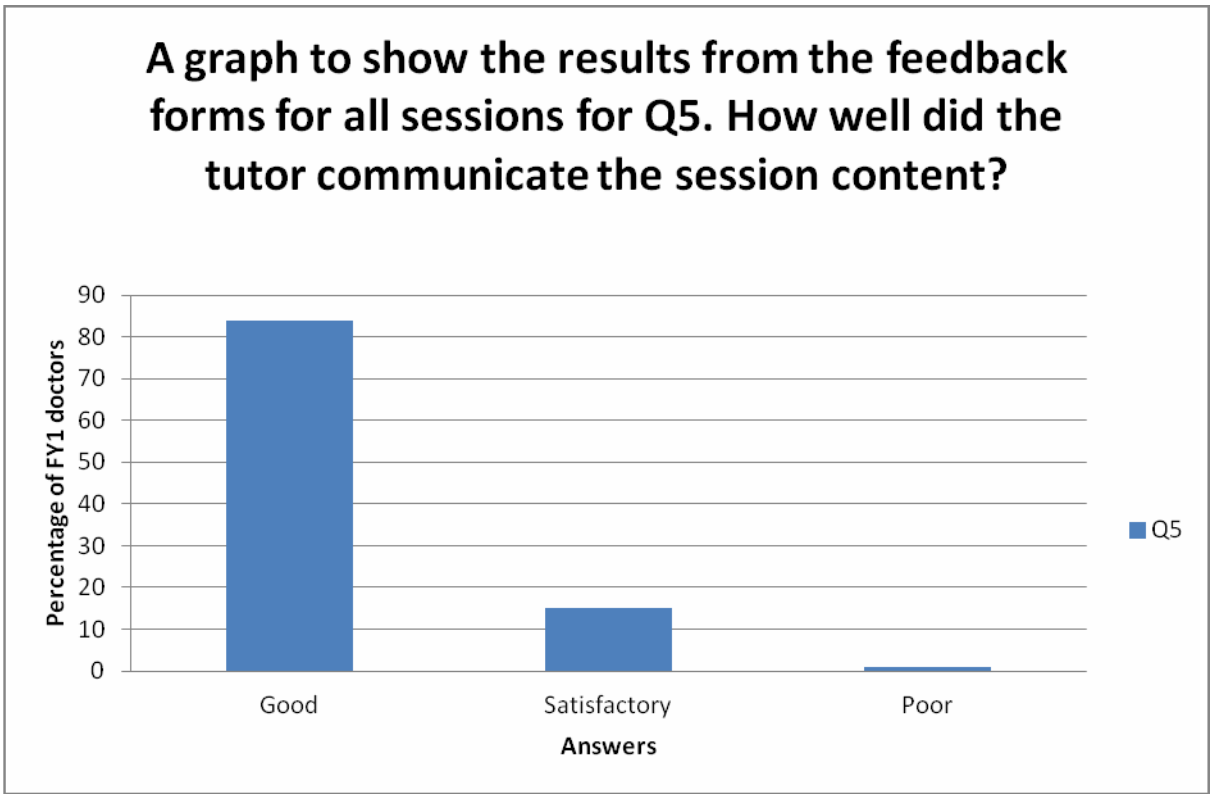
Overall Totals for all sessions:

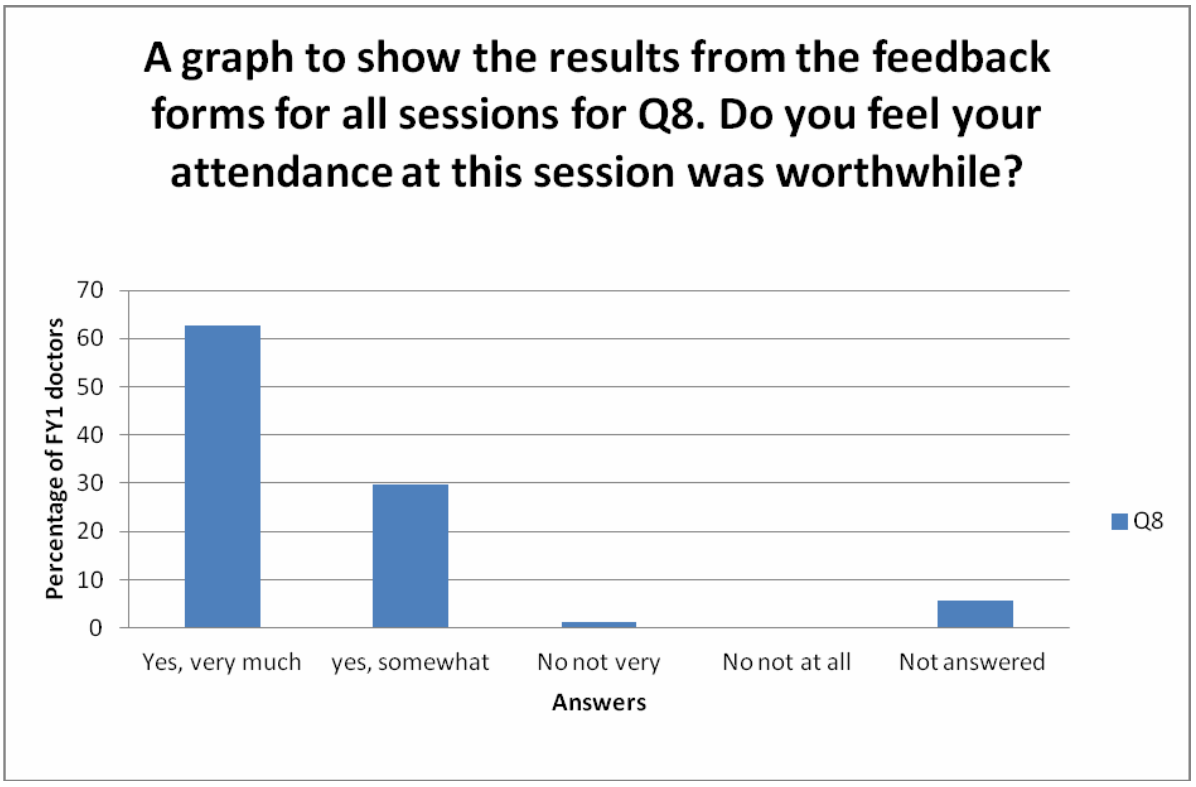


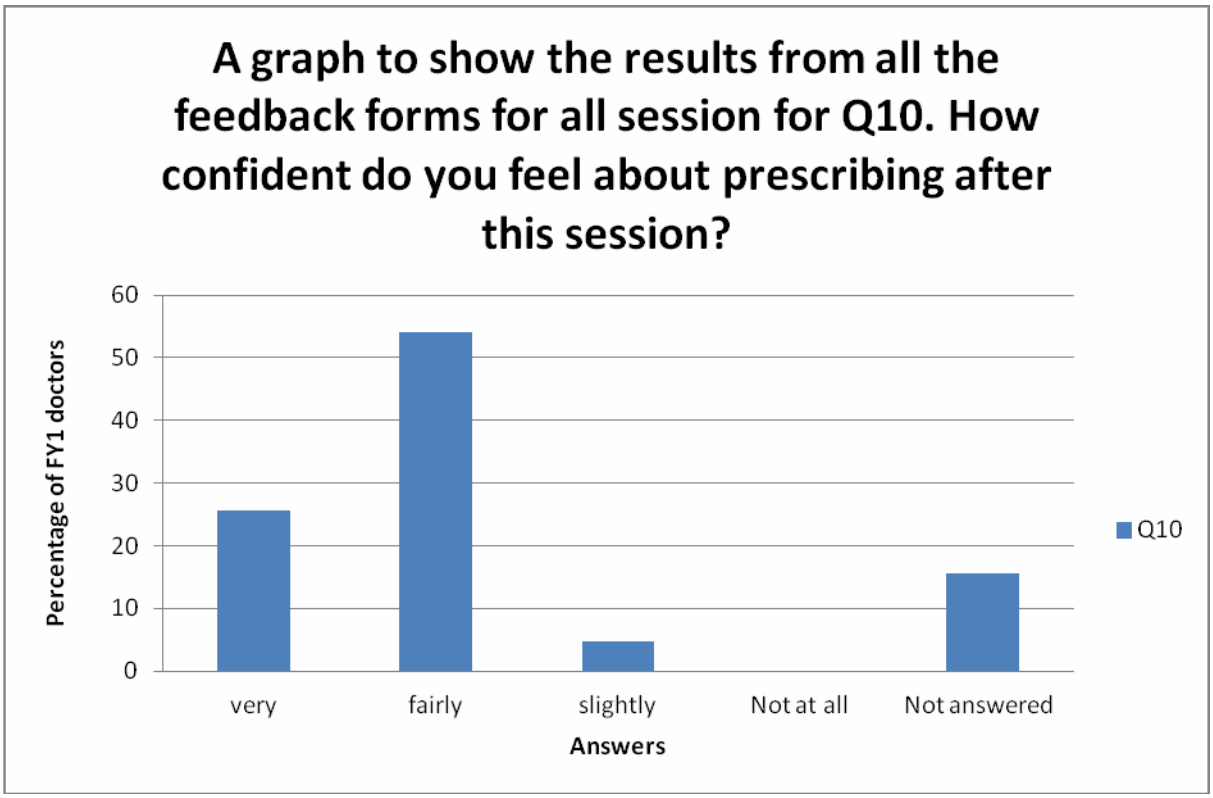


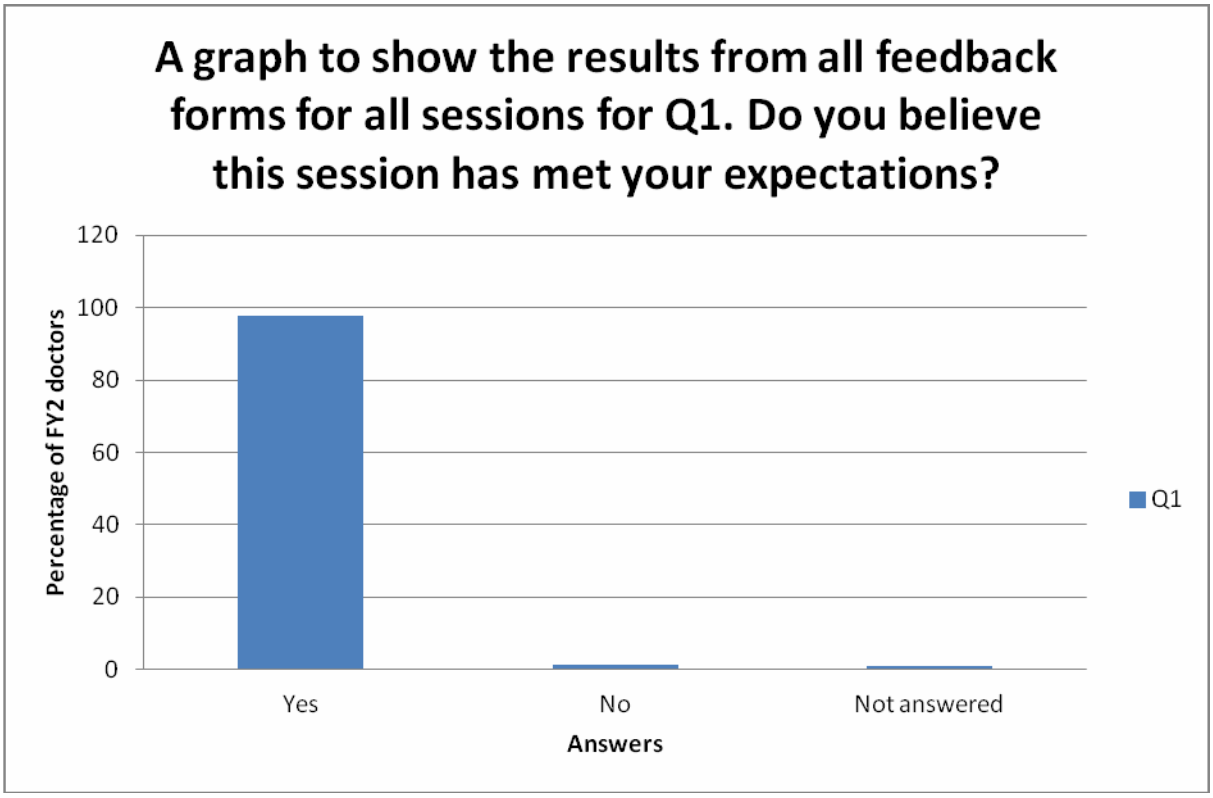

A graph to show the results of all the feedback forms for all the sessions for Q3. Did you learn anything new at this work session?
Percentage of FY1 doctors
60
50
40
30
20
10
0
A lot
Some
No but Useful
Nothing
Not answered
Answers
Q3

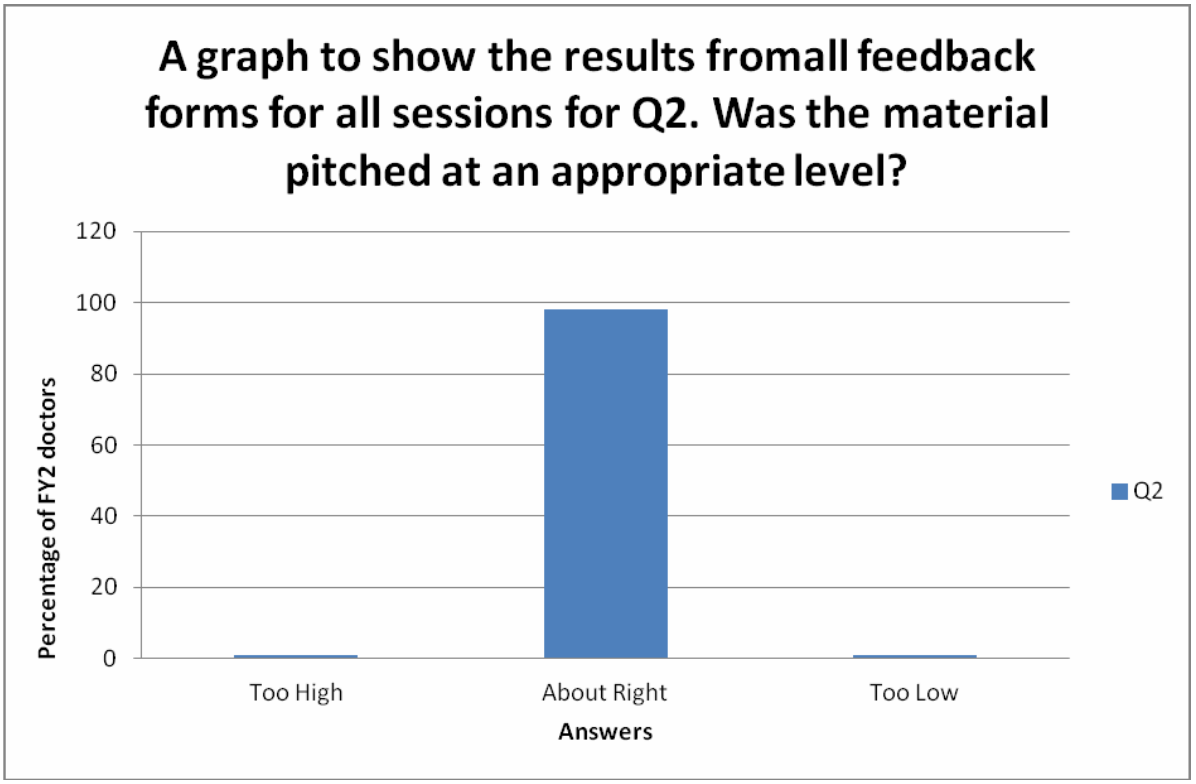

A graph to show all the results for the feedback forms all the sessions for Q4. How would you rate the session content?
Percentage of FY1 doctors
90
80
70
60
50
40
30
20
10
0
Good
Satisfactory
Poor
Answers
Q4

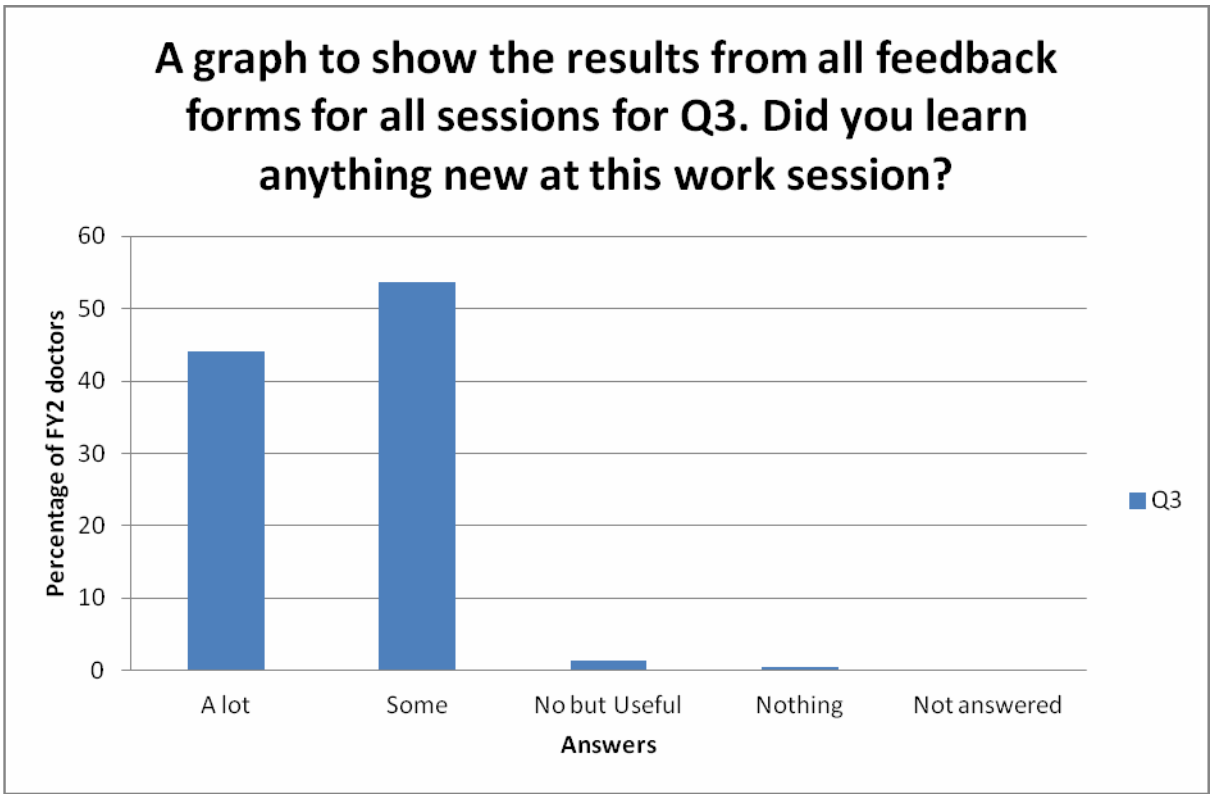

A graph to show the results from the feedback forms for all sessions for Q5. How well did the tutor communicate the session content?
Percentage of FY1 doctors
90
80
70
60
50
40
30
20
10
0
Good
Satisfactory
Poor
Answers
Q5

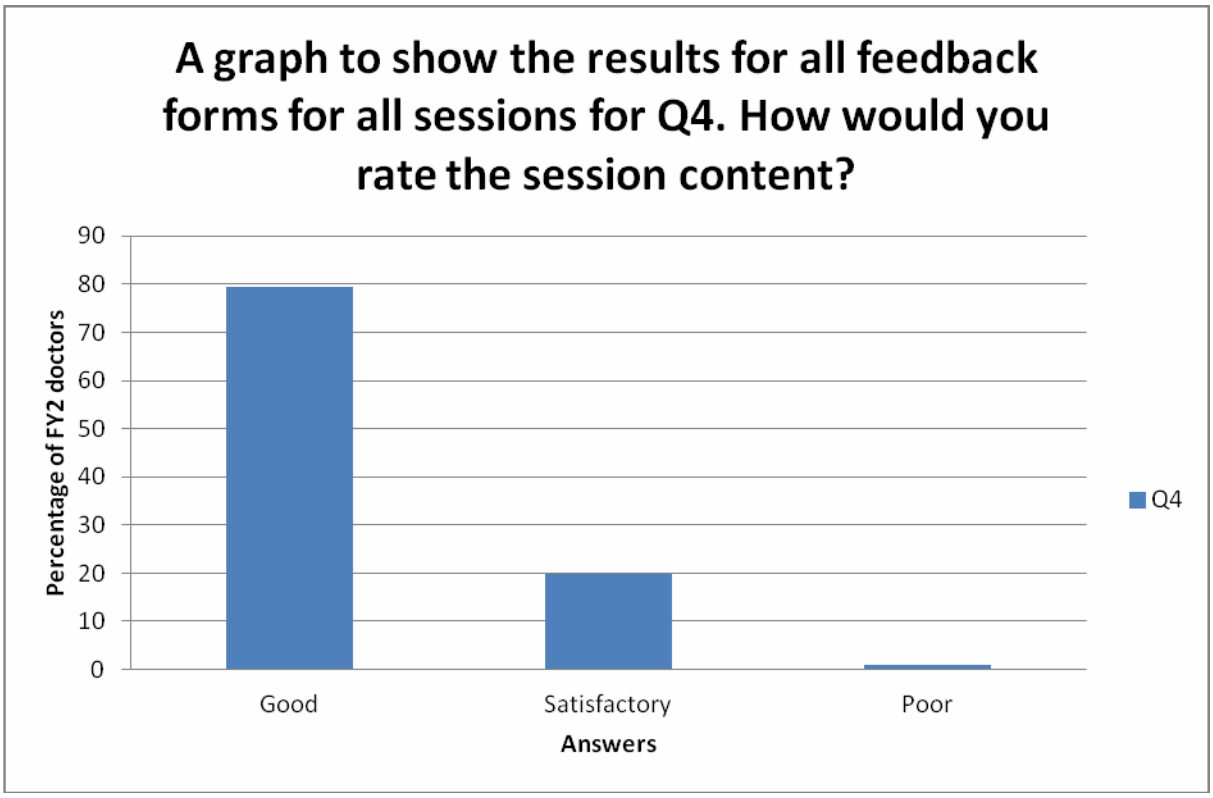

A graph to show the results from the feedback forms for all sessions for Q8. Do you feel your attendance at this session was worthwhile?
Percentage of FY1 doctors
70
60
50
40
30
20
10
0
Yes, very much
yes, somewhat
No not very
No not at all
Not answered
Answers
Q8

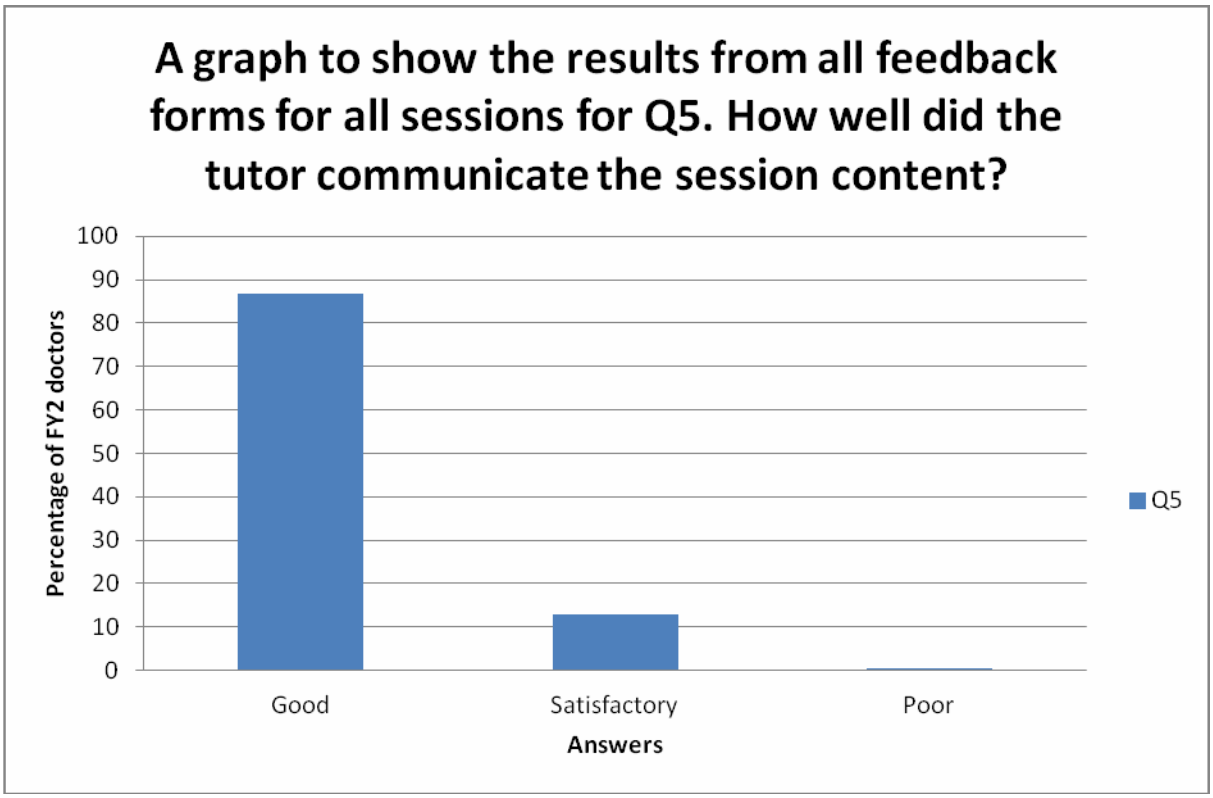

A graph to show the results from all the feedback forms for all session for Q10. How confident do you feel about prescribing after this session?
Percentage of FY1 doctors
60
50
40
30
20
10
0
very
fairly
slightly
Not at all
Not answered
Answers
Q10

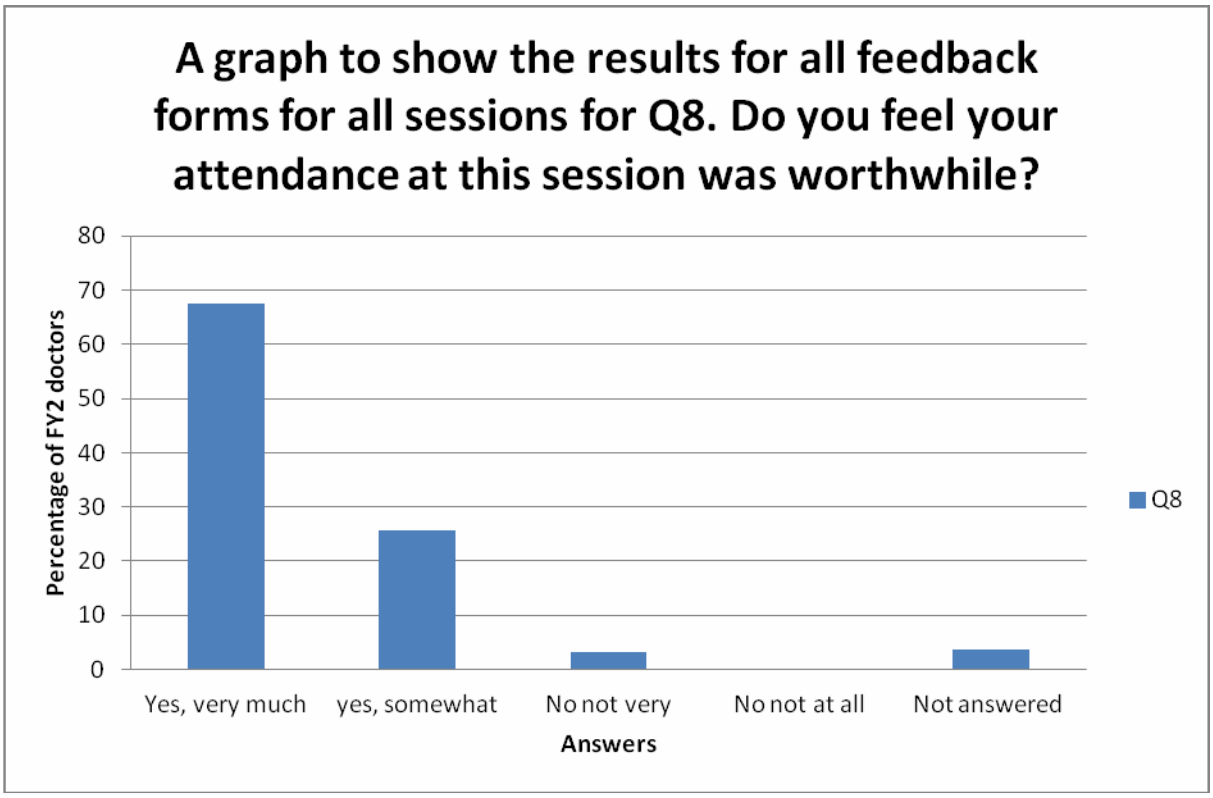

A graph to show the results from all feedback forms for all sessions for Q1. Do you believe this session has met your expectations?
120
100
80
60
40
20
0
Percentage of FY2 doctors
Yes
No
Not answered
Answers
Q1

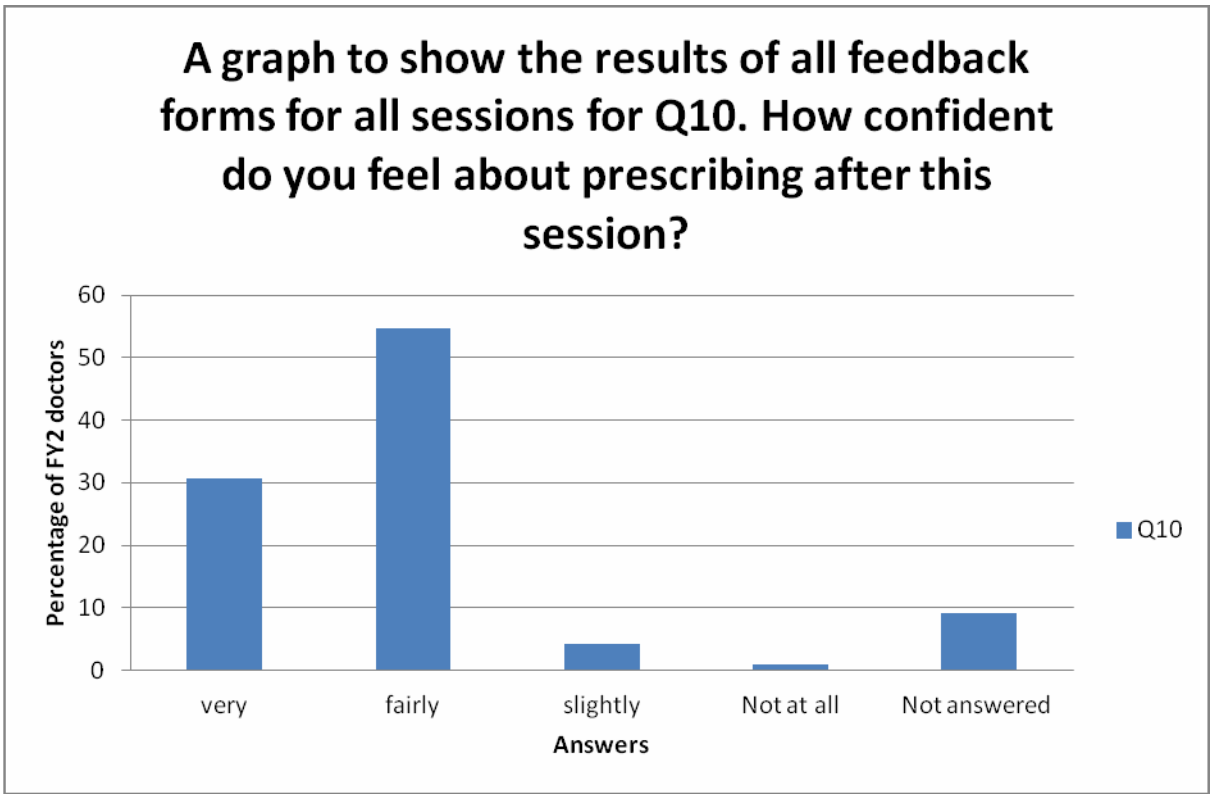

A graph to show the results fromall feedback forms for all sessions for Q2. Was the material pitched at an appropriate level?
120
100
80
60
40
20
0
Percentage of FY2 doctors
Too High
About Right
Too Low
Answers
Q2


A graph to show the results from all feedback forms for all sessions for Q3. Did you learn anything new at this work session?
Percentage of FY2 doctors
60
50
40
30
20
10
0
A lot
Some
No but Useful
Nothing
Not answered
Answers
Q3

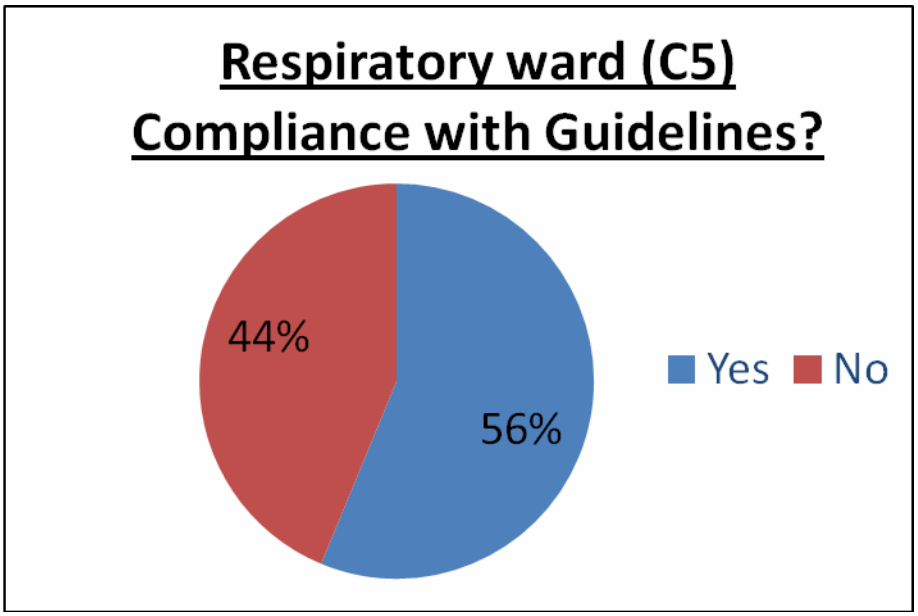

A graph to show the results for all feedback forms for all sessions for Q4. How would you rate the session content?
Percentage of FY2 doctors
90
80
70
60
50
40
30
20
10
0
Good
Satisfactory
Poor
Answers
Q4

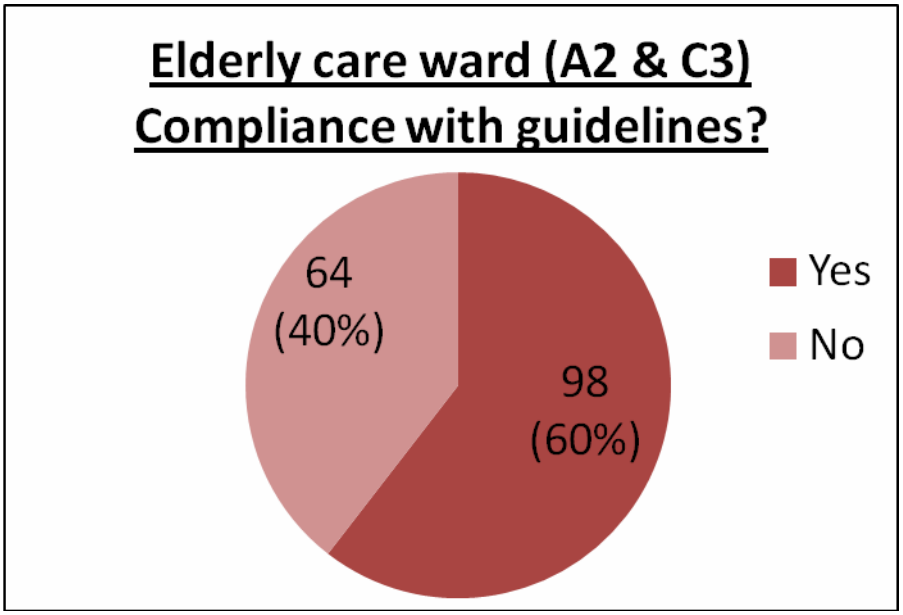

A graph to show the results from all feedback forms for all sessions for Q5. How well did the tutor communicate the session content?
Percentage of FY2 doctors
100
90
80
70
60
50
40
30
20
10
0
Good
Satisfactory
Poor
Answers
Q5


A graph to show the results for all feedback forms for all sessions for Q8. Do you feel your attendance at this session was worthwhile?
Percentage of FY2 doctors
80
70
60
50
40
30
20
10
0
Yes, very much
yes, somewhat
No not very
No not at all
Not answered
Answers
Q8


A graph to show the results of all feedback forms for all sessions for Q10. How confident do you feel about prescribing after this session?
Percentage of FY2 doctors
60
50
40
30
20
10
0
very
fairly
slightly
Not at all
Not answered
Answers
Q10

Appendix 7: Compliance with Guidelines for antibiotics.





NHS
Health Education England

Appendix 8: Snapshot Audit results for Antibiotics

Date	Number of patients Audited	% of patients on antibiotics in the Trust	% of patients on IV antibiotics	**% of patients with allergy status recorded on the chart**	**% of patients with an allergy, which has the nature documented on the chart**	% of patients on IV antibiotics > 48 hours	% of patients on antibiotics where total course >5 days	% with duration (or stop/review date) documented on drug chart	% with the indication for therapy on the prescription chart
31/01/2009	494	35.2	16.2	**55.1**		52.5	29.9		
30/04/2009	538	33.0	14.0	**68.0**		81.0	51.0		
31/07/2009	510	38.6	18.2	**92.9**		72.0	58.4	**43.1**	
31/03/2010	327	39.8	21.1	**96.9**		53.6	50.0	**28.0**	
30/06/2010	533	37.3	17.8	**94.9**		69.5	40.0	**36.8**	
30/11/2010	456	40.6	18.4	**97.8**	**30.0**	59.5	28.9	**31.9**	
31/01/2011	466	38.0	20.0	**98.3**	**36.2**	65.6	50.0	**31.3**	
31/05/2011	445	36.9	19.3	**98.9**	**21.2**	51.2	25.0	**29.3**	
30/06/2011	485	37.1	14.0	**95.7**	**18.9**	55.9	28.3	**47.8**	
31/09/2011	508	30.9	18.5	**98.6**	**25.2**	57.4	23.6	**42.7**	
31/01/2012	451	39.9	24.4	**96.9**	**35.4**	61.8	32.2	**33.9**	
31/04/2012	512	36.7	19.5	**98.0**	**31.0**	64.0	25.5	**37.8**	**10.6**
31/07/2012	473	33.5	18.4	**96.3**	**45.5**	62.2	37.8	**37.8**	**12.8**
30/10/2012	423	38.3	17.0	**97.9**	**19.5**	65.3	32.1	**38.3**	**5.6**
31/01/2013	580	41.0	25.3	**98.6**	**37.3**	53.1	16.4	**31.9**	**5.9**
31/04/2013	559	44.5	23.6	96.8	**30.2**	47.0	8.8	**30.5**	**6.0**
31/06/2013	550	38.0	21.5	**98.9**	**45.2**	46.6	9.6	**28.7**	**4.8**

Mean
485

Regional Targets						
> 98%	**> 98%**	IV Abx > 72 hours	Abx course over 7 days	**> 70%**	**> 70%**
95 - 98%	**95 - 98%**			**50 - 70%**	**50 - 70%**
< 95%	**< 95%**			**< 50%**	**< 50%**

Appendix 9: SCRIPT data

Statistical analysis

In the first instance, changes from pre- to post-test scores were calculated for each foundation trainee and module combination. The mean improvement in the scores was then calculated for the following three groups of doctors:

- F1 (2011-12) who completed the module with no educational session
- F1 (2012-13) who completed the module before the educational session
- F1 (2012-13) who completed the module after the educational session

A generalised estimating equation was then produced in order to analyse the effect of the educational session after accounting for the potentially confounding effects of trainee cohort (F1 2011-12 and 2012-13), time taken to complete the online test and period of the rotation. The model also accounted for correlations between the tests completed by the same doctor. All analysis was performed using IBM SPSS v19.0 (Chicago, USA), with $p<0.05$ treated as significant.

RESULTS

Uni-variable

Group	Average Improvement *Mean (SEM)*
F1 (2012-13) After Completed Session	+2.56 (0.21)
F1 (2012-13) Before Completed Session	+3.05 (0.19)
F1 (2011-12) No Session Completed	+3.07 (0.13)

ANOVA: p=0.085

The F1s taking the test after the session had the smallest improvement, but no significant difference was detected across the groups (p=0.085).

If you take the educational sessions in isolation, the difference is approximately 0.5 marks worse for the F1 trainees who received the educational session, although this is not significant.

Trainees who completed the educational sessions took the module test later in their rotation (p<0.001).

Group	Day of rotation test was taken *Median (quartiles)*
F1 (2012-13) After Completed Session	160 (128,195)
F1 (2012-13) Before Completed Session	116 (68,154)
F1 (2011-12) No Session Completed	124 (59,230)

Kruskal-Wallis: p<0.001

Multi-variable

The results from the generalised estimating equation found that after adjusting for potentially confounding factors, doctors completing the session had improvements in test scores that were 0.06 (SE=0.5) lower than those not completing the session, which was not statistically significant (p=0.901).

Appendix 10: Incident Data