ACADEMY OF MEDICAL ROYAL COLLEGES

CONCERNS REGARDING THE PRESCRIBING AND ADMINISTRATION OF CYTOTOXIC AND IMMUNOSUPPRESSANT AGENTS BY FOUNDATION DOCTORS:

AN INVESTIGATION OF PREVAILING PRACTICE

Concerns regarding the potential risk to patients from prescription of chemotherapy by Foundation Doctors were raised at the Academy of Medical Royal Colleges Foundation Programme Committee. The concerns were reported to the Chief Medical Officers (CMOs) who acknowledged that this was an important issue and requested further information. In response the Academy established a cross specialty working group with input from Medical Royal Colleges, the UK Foundation Programme Office and the Academy Foundation Programme Committee (AFPC).

The following were considered as options:

- An audit to establish the extent to which foundation trainees are being expected to prescribe / administer anti-cancer treatment
- The AFPC make statements to the effect that 'F1 doctors should not be prescribing / administering chemotherapy to cancer patients'
- The wording relating to prescribing/administering chemotherapy in the curriculum is changed.

A survey was carried out between July and September 2013 with the aim of establishing the extent to which foundation doctors and core medical trainees were involved in prescription of chemotherapy and immunosuppressant agents in the context of systemic anticancer therapy and in other clinical situations.

This report outlines the results of the survey and highlights good and bad practice. It makes recommendations in the interests of patient safety which might be applied across the four nations.

CURRENT POSITION

Curriculum

The Foundation Programme Curriculum clearly emphasises that foundation doctors must always work within their competence, '*during the programme, Foundation Doctors work in a supportive environment where they are properly managed and supervised, enabling them to learn through service delivery whilst ensuring that patients are not put at risk. Foundation doctors practise within their own level of competence and are provided with adequate supervision and feedback to reach higher levels of competence in existing skills and to acquire new skills*'.[1]
Additionally, in section 7.5 there is a competence relating to cytotoxic drugs:

'*Understands the limitations of F1 doctors prescribing and transcribing prescriptions for cytotoxic drugs'.*

It is noted that there is considerable doubt from within Clinical Oncology as to how foundation doctors (particularly FY1), might acquire and maintain competencies relating to cytotoxic drug administration.

Four Nation Approach

The AFPC has identified that one difficulty is the lack of unanimity of guidance or regulation pertaining to all four nations. In Scotland, the Chief Executive's Letter, CEL 30 (2012), signed by the Chief Medical, Nursing and Pharmaceutical Officer has been endorsed by the Scottish Cancer Taskforce.[2] It details the guidance primarily intended to promote the safe use of medicines to treat cancer. This is the current basis for local review of the safe use of chemotherapy guidelines. Within the guidelines, evidence of training documented in each staff member's training record is mandatory. It does not however, mention specifically the grade of trainee doctor involved or that there might be restrictions on this.

The Kent, Surrey and Sussex Local Education and Training Boards have also issued specific guidance on the prescription, transcription and administration of drugs for foundation doctors which states '*It is the LEP's responsibility to ensure that FDs and their supervisors are fully aware of the risks and responsibilities associated with the prescription, transcription and administration of drugs'.*[3]

Pharmacists may be seen as being the most appropriate gate keepers for such drugs, however, there is significant local variation in practice. Equally electronic prescribing, with built in software safeguards, is not universally available throughout the UK.

SURVEY

The survey was open between June to September 2013 and was circulated by the Academy of Medical Royal Colleges through the UK Foundation Programme Office, together with the Royal Colleges of Physicians (England and Scotland) and Royal College of Radiologists and the Royal Pharmaceutical Society. One hundred and nine responses were received to the survey. Although not comprehensive this is likely to be representative of practice and in any case identifies important issues. Appendices 1 to 4 detail the survey.

Data from the closed questions were analysed using Survey Monkey software and the responses from the open-ended questions were reviewed for emerging themes. Further data was received from the electronic discharge summary at a London Trust.

It is clear from the results that prescribing cytotoxic and immunosuppressant agents by foundation doctors and core medical trainees is not uncommon and occurs in the context of oncology and several other specialties. Analysis of the free text responses suggests that prescribing by these doctors is less common in oncology units accounting only for approximately 25%. This suggests that the control of

prescribing is tighter in oncology units where electronic prescribing and protocols are more likely to be in place.

It is of concern to hear accounts of breaches of prescribing protocols and in particular to have examples of doctors being asked to prescribe drugs excluded by protocols. However, the greatest concern is the number adverse incidents including one death related to prescribing these agents. Fortunately pharmacists detected many of the prescribing errors before harm could occur, indicating the importance of checks and failsafe mechanisms. Methotrexate was the most commonly cited drug associated with complications. This is frequently used as a disease modifying agent outside oncology units and a lack of familiarity with the drug may be the reason it is so often problematic. The free text comments show that many of the errors are perceived to a lack of knowledge of pharmacology and prescribing training.

The use of bespoke electronic prescribing systems for chemotherapy has the potential to reduce errors. This is particularly likely if access to e-prescribing is restricted to those who have received specific training in the use of these agents. E-prescribing also has the advantage of being able to highlight potential drug interactions and to be linked to appropriate haematological and biochemical monitoring.

There is desire for national guidance and better training regarding the prescription of cytotoxic and immunosuppressant agents and also drugs with a narrow therapeutic index. There are clear opportunities to reduce risk to patients through national and local actions such as improving training, promoting and adhering to protocols and introducing safer prescribing systems with additional safeguards.

The implications for drug prescription

Simply prohibiting FY1 doctors from prescribing groups of drugs “en masse” would be failing to recognise other indications for drug use and might prove unworkable. One suggestion supports the absolute restriction on prescribing chemotherapy for cancer patients but allowing the re-prescription of disease-modifying or anti-rejection drugs e.g. in autoimmune conditions, dermatology, rheumatology etc. This would be difficult to monitor and ignores the risks associated with re-prescribing these drugs, which should not be underestimated e.g. Methotrexate daily instead of weekly.

Leadership and Ownership

Oncology involves more than one Royal College, yet it is clear that there is a need for a single expert body to take ownership of this issue and to ensure progress is made. There needs to be input from those Colleges/Specialties likely to be impacted by blanket statements on classes of drug. The Royal College of Physicians Specialist Advisory Committee for Medical Oncology (SAC Chair: Professor David Cunningham) is currently working on a framework within the Medical Oncology curriculum detailing chemotherapy competencies. Although the SAC deals with StR training, the committee may be a useful resource to examine the pertinent issues. The Royal College of Radiologists Faculty of Clinical Oncology has indicated its desire to be involved in the development of guidelines and educational materials. The role of the Royal Pharmaceutical Society is also crucial.

In the interests of patient safety, discussion between all stakeholders is clearly necessary to move this important issue forward. The AFPC feels that they can support any initiative but are not in a position to lead this work.

It is felt that a Task and Finish Group should be established to develop appropriate guidelines and educational materials. This would have the advantage of ensuring a single expert body reflecting the range of colleges, specialties and disciplines involved. The Academy would be pleased to manage this process.

CONCLUSIONS

1. Prescription of chemotherapy and immunosuppressant agents by foundation doctors and core medical trainees occurs in many specialties.

2. There is a perceived lack of understanding of the risks of these agents and the requirements for monitoring and supportive therapy which accompany their use.

3. Adverse incidents related to prescribing these agents are not uncommon and at least one death was reported.

4. Methotrexate was the agent most commonly cited in relation to adverse incidents.

5. There are concerns regarding other agents particularly those with a low therapeutic index which should also be addressed.

6. Close monitoring of prescribing by pharmacists and the use of electronic prescribing systems which can only be accessed by authorised doctors appears to offer the greatest safety system.

7. There is a perceived lack of specific training for doctors involved in the prescription of these agents.

8. There is a perceived lack of national guidance regarding prescribing these agents.

RECOMMENDATIONS

National

1. That the CMOs note the extent of prescribing of drugs with a narrow therapeutic index by inadequately trained doctors, in systems which lack appropriate safeguards and which represent a predictable risk to patients which could be addressed by standards that apply across specialties and across the four nations.

2. That training in the use of agents with a narrow therapeutic index is included in undergraduate curricula and is formally assessed.

3. That realistic and proportionate standards of training and assessment should be developed for healthcare professionals prescribing these agents. The relevant medical Royal Colleges should adopt these standards into their core and specialty training curricula.

4. That specialty specific educational and assessment resources are developed by medical Royal Colleges and the Royal Pharmaceutical Society relevant to the prescribing and monitoring of these agents

5. That a minor curriculum modification is made to the Foundation Programme Curriculum indicating that '*additional training is required to prescribe administer drugs in certain circumstances e.g. prescription / administration of chemotherapy for cancer patients requires specific training*.'

Local

1. That all healthcare providers should ensure that systems and safeguards are in place to prevent harm to patients from incorrect prescribing/monitoring of agents with a narrow therapeutic index.

2. That induction sessions should specifically state that prescribing of chemotherapy and immunosuppressive agents is prohibited without satisfactory demonstration of appropriate competence e.g. by completion of a designated and approved training programme.

ACKNOWLEDGEMENTS

The data was analysed and the report prepared by Dr David Kessel and Dr Neil Dewhurst.

We are grateful to members of the steering group; Professor David Cunningham, Dr Clare Van Hamel, Dr Di Gilson for their help in designing and circulating the questionnaire.

Particular thanks are owed to Claire Mallinson (Chair NACT UK), Helen Gordon (Chief Executive Royal Pharmaceutical Society) and Dr Catherine Duggan (Director of Professional Development and Support at the Royal Pharmaceutical Society of Great Britain) for encouraging so many of their members to respond to the survey.

REFERENCES:

1. http://www.foundationprogramme.nhs.uk/pages/home
2. http://www.sehd.scot.nhs.uk/mels/CEL2012_30.pdf
3. http://www.stfs.org.uk/sites/stfs/files/Foundation%20Doctor%20Role%20within%20the%20LEP%20and%20Minimum%20Requirements%20for%20Clinical%20Supervision.pdf.

APPENDICES

Appendix 1 Survey Questions

Appendix 2 Survey results

Appendix 3 Data from a single London Trust

Appendix 4 Additional survey comments

APPENDIX 1
SURVEY QUESTIONS

An 11 question survey comprising closed and open ended responses was constructed using Survey Monkey. The questions were:

1. Please give your name, role and organisation.

2. Are these doctors ever required to initiate (i.e. write the first prescription for) treatment with anticancer or immunosuppressant drugs?

3. Do these doctors ever repeat prescribe anticancer or immunosuppressant drugs, including subsequent cycles of treatment?

4. Do these doctors ever authorise the administration of previously prescribed anticancer or immunosuppressant drugs?

5. Do these doctors ever administer anticancer or immunosuppressant drugs?

6. Do these doctors ever prescribe discharge anticancer or immunosuppressant drugs?

7. Do these doctors receive any special training for these tasks?

8. Are you aware of any adverse incidents relating to these doctors prescribing or being asked to prescribe, authorise or administer anticancer or immunosuppressant drugs?

9. Is prescription of anti-cancer and immunosuppressant drugs restricted by e-prescribing or local protocol?

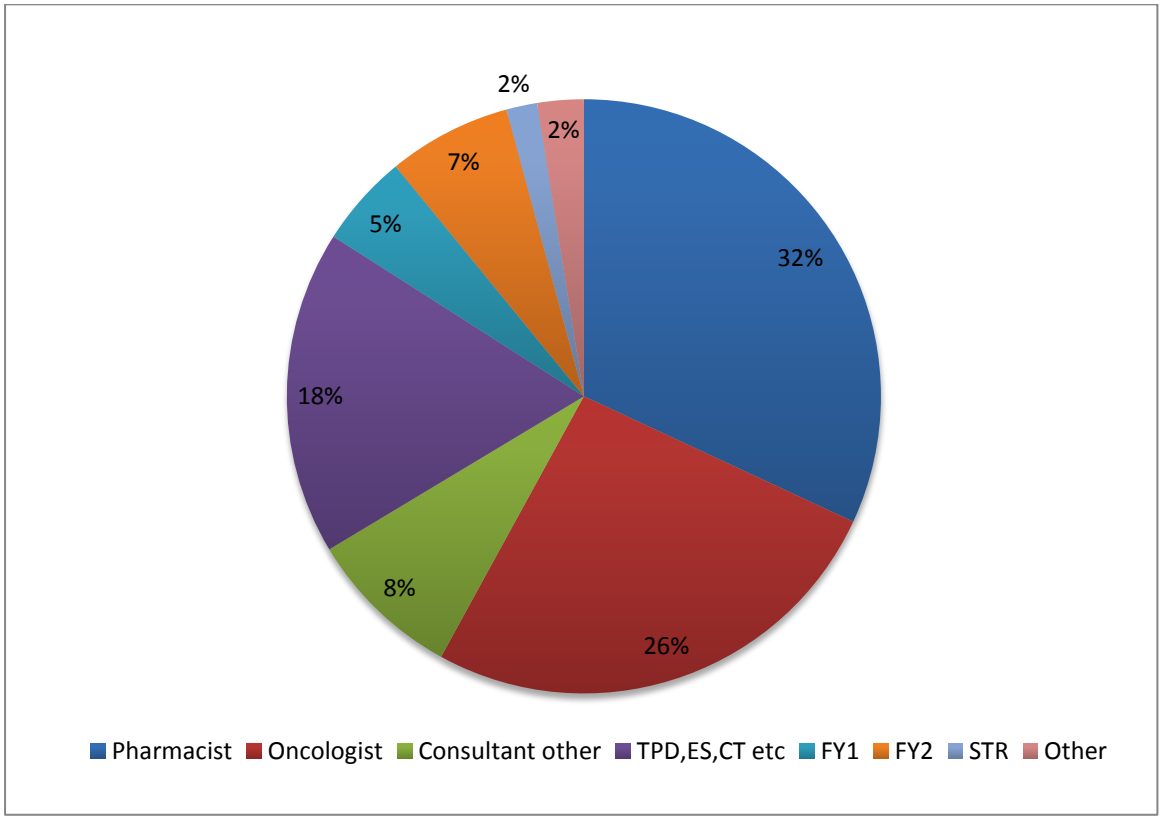
10. Do you have any additional comments e.g. other drugs / agents which require specific training?

11. Do you believe any further guidance or action is required on this issue?

APPENDIX 2
SURVEY RESULTS

Q1 Role of study respondents
One hundred and nine responses were obtained, the highest response rates were from pharmacists and consultant oncologists followed by those with a designated training role.

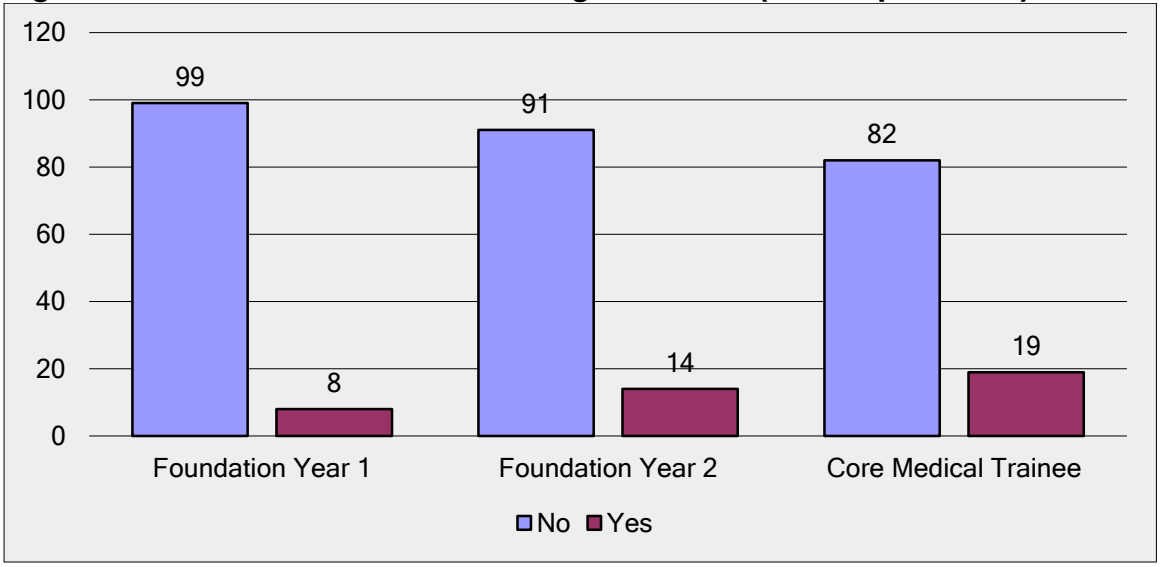
Figure 1: Breakdown of the survey respondents by role



Key:
TPD: Training Programme Director
ES: Educational Supervisor
CT: Clinical Tutor
FY1: Foundation year 1 doctor
FY2: Foundation year 2 doctor
STR: Specialty trainee doctor

Q2 Initiation of treatment with anticancer or immunosuppressant drugs
Doctors in FY1 (7.5%), FY2 (13.3%) and core medical training (18.8%) are all required to initiate treatments with increasing numbers as they become more senior (Figure 2).

Figure 2: Numbers of doctors initiating treatment (107 respondents)



Twenty seven free text responses were received, of these 17 indicated the clinical situations in which prescribing occurred. The comments suggest that prescribing these agents occurs least often in oncology 4 (23.5%) and most frequently in other specialties 13 (76.5%). Some of the comments suggested safeguards were in place. Selected comments are shown in Table 1.

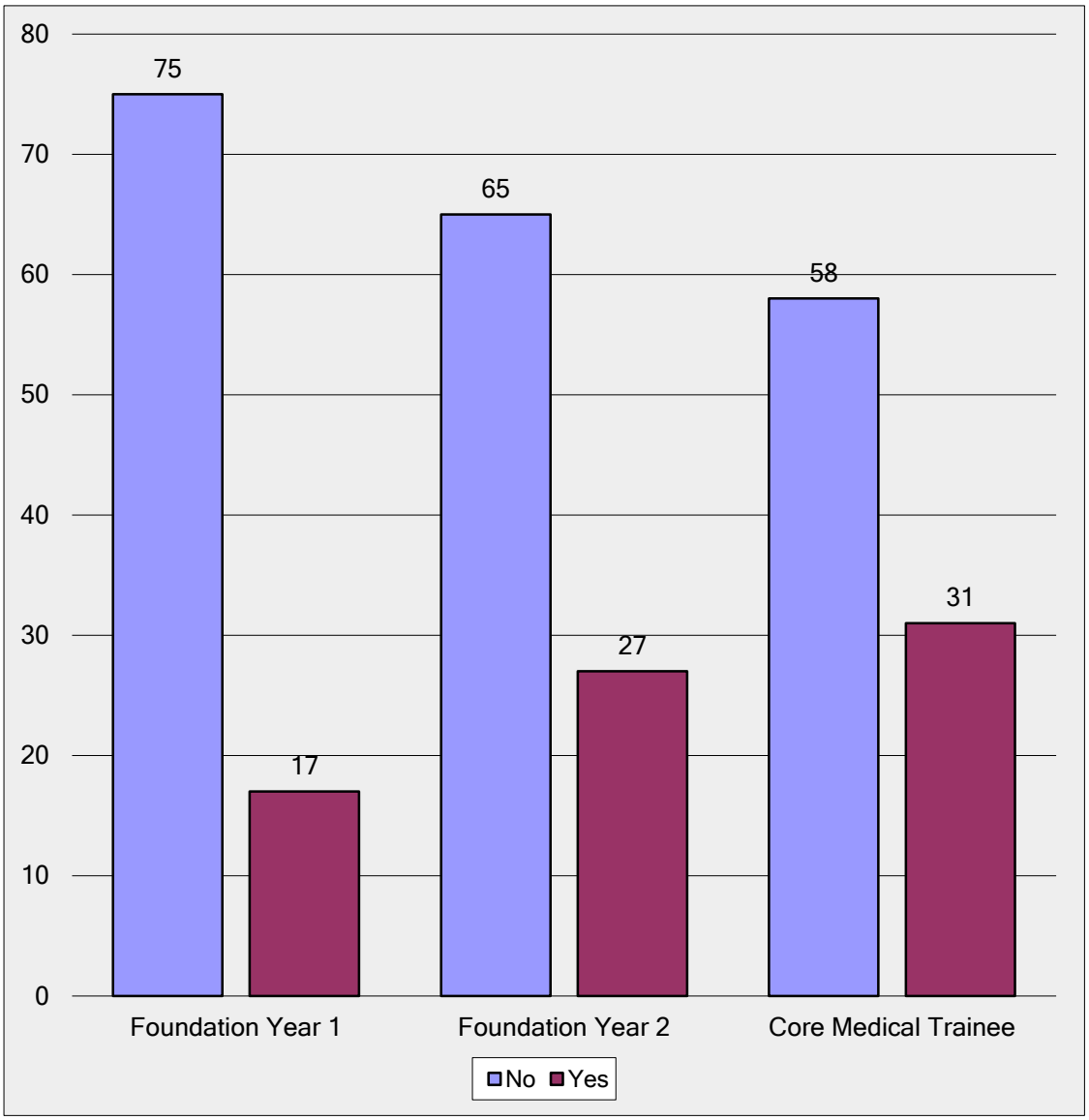
Table 1. Specimen responses to: Are these doctors ever required to initiate (i.e. write the first prescription for) treatment with anticancer or immunosuppressant drugs?

- When signed off
- When plan agreed
- On advice of senior doctor e.g. cyclophosphamide for vasculitis
- Transcription of regular medication on emergency admission
- F2 methotrexate under consultant supervision just possible.

Q3 Do these doctors ever repeat prescribe anticancer or immunosuppressant drugs, including subsequent cycles of treatment?

Repeat prescribing was more frequent than initiation of treatment and reported in FY1 (18.5%), FY2 (29.3%) and core medical training (34.8%) see Figure 3. Thirty six free text comments were received and were broadly similar to those in Question 2 above with the majority of instances occurring outside oncology.

Figure 3: Frequency of repeat prescribing



Q4 Do these doctors ever authorise the administration of previously prescribed anticancer or immunosuppressant drugs?

Authorisation of administration of anticancer and immunosuppressant drugs occurred in very similar numbers and circumstances to repeat prescription and reported in FY1 (19.1%), FY2 (31.3%) and core medical training (40.0%).

Q5 Do these doctors ever administer anticancer or immunosuppressant drugs?

Administration of anticancer or immunosuppressant drugs was relatively infrequent and reported in in FY1 (4.4%), FY2 (7.8%) and core medical training (13.6%). The 11 free text responses that were received suggested that treatment was given in roughly equal proportions in oncology and other specialties.

Q6 Do these doctors ever prescribe discharge anticancer or immunosuppressant drugs?

Prescription of discharge medications was common and increased with clinical seniority: FY1 (28.7%), FY2 (42.5%) and core medical training (45.8%). Free text responses indicated that discharge prescribing usually involved transcription of drugs on the inpatient prescription. Some specific comments indicated safeguards (Table 2).

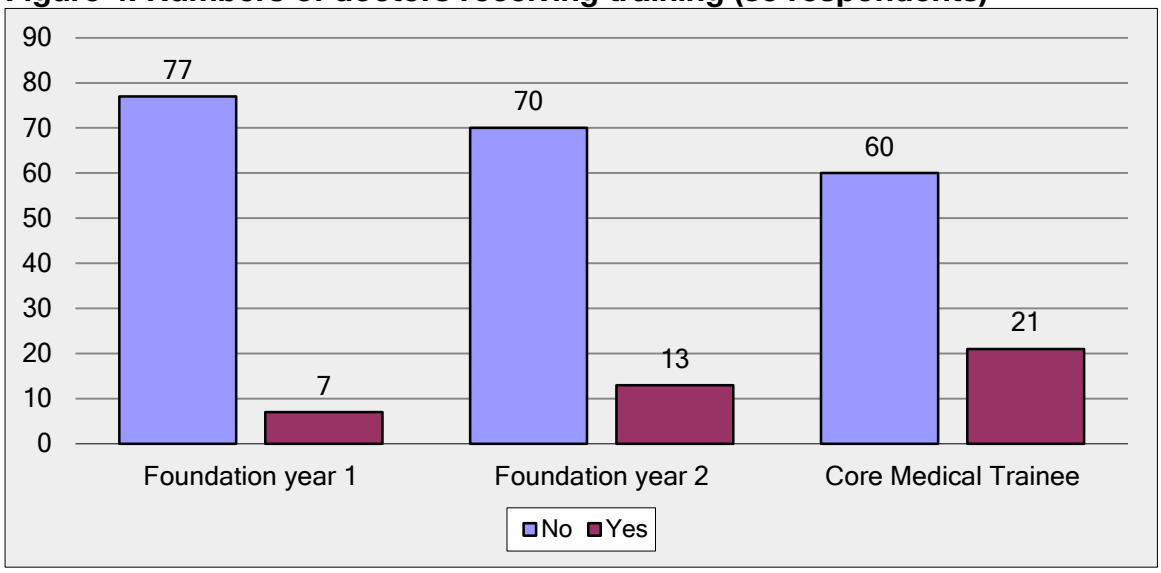
Table 2. Specimen responses from Q6 indicating some of the safeguards

- In our oncology unit all TTOs with chemotherapy agents (e.g. capecitabine) have to be countersigned by a consultant
- They may repeat prescribe immunosuppressive drugs. Anticancer medicines previously prescribed may be transcribed by a junior and countersigned by a senior
- Transcription from chemotherapy prescribed on the ward: these prescriptions would be checked by the oncology pharmacist
- They do not prescribe discharge anticancer drugs, but will complete immediate discharge letter indicating what the patients discharge drugs are that have been prescribed by appropriate others.

Q7 Do these doctors receive any special training for these tasks?

The question was not answered by 24 (22%) of respondents to the survey. Amongst those responding the proportion receiving training increased with seniority FY1 8.3%, FY2 15.7% and core medical training 25.9% (Figure 4).

Figure 4: Numbers of doctors receiving training (85 respondents)



Free text answers were received from 33 respondents; many indicated that no training was given as the doctors were not expected to perform the tasks. Table 3 below illustrates the types of training that were provided.

Table 3. Training for prescribing and administering chemotherapy and immunosuppressant agents.

Generic

- Pharmacy induction and Junior Doctor training
- Prescribing training at the start of their training year
- General prescribing training but not specific to these areas
- At induction, information in trust medicines code of practice outlining roles and responsibilities
- Not any more than the training they receive for prescribing drugs in general.
- Mostly at medical school re methotrexate.

Specific

- Competency assessed FRCR course ongoing
- CMT receive training in chemotherapy provision but are NOT able to prescribe
- Lecture at induction from consultant pharmacist and departmental prescribing protocol hand book issued
- Induction and teaching sessions include advice about when safe and not safe to proceed with chemotherapy
- Not sure if this is covered in their block teaching or at medical school
- The prescriptions they generate are mainly for the 'TTO' drugs.

Q8 Adverse incidents.

Adverse incidents were reported in FY1 (14.2%), FY2 (14.2%) and core medical training (10.8%). Twenty three respondents included free text comments. Many of the errors were detected by the pharmacist and included incorrect drug, incorrect dose, incorrect route of administration and incorrect dose schedule.

Selected comments are included in Table 4. Four (17%) comments referred specifically to issues with the prescription of methotrexate (including one death). Only a single response (to Q4) indicated that bloods were checked prior to administration.

Table 4 Are you aware of any adverse incidents relating to these doctors prescribing or being asked to prescribe, authorise or administer anticancer or immunosuppressant drugs?
• Multiple prescribing errors. Prescribing chemo to patients admitted with toxicity from chemotherapy etc • Fatal neutropenic sepsis in elderly patent on orthopedic ward when MTX was not withdrawn despite ongoing infection • Methotrexate weekly prescribed daily • Not specific to these grades. As in many trusts we have had to intervene to prevent daily prescription of methotrexate • Incorrect dose calculations - corrected by pharmacist. Incorrect frequency (daily methotrexate) corrected by pharmacist. Prescribing against inappropriate bloods. Failure to note interaction of immunosuppressant with live vaccine. Transcribing of drug charts with methotrexate • Number of IR1's relating to non-specialist staff prescribing oral Chemotherapy • Lack of awareness of importance of renal function for chemo-radiotherapy schedules involving cisplatin • Inadvertent - unaware they were prescribing a cytotoxic agent • Lot of these staff are unaware of what they are actually prescribing and their potential toxicities/complications • Interactions in general not spotted.

Q9 Is prescription of anti cancer and immunosuppressant drugs restricted by e-prescribing or local protocol?

The majority of centres have e-prescribing or protocols in place to limit prescribing but 20-25% do not. Sixty (60%) free text responses were recorded. Several respondents indicate the use of proprietary systems and indicate that trainees do not have password access to electronic prescribing systems. Several respondents indicated examples of failsafe mechanisms (Table 5).

Table 5. Is prescription of anti-cancer and immunosuppressant drugs restricted by e-prescribing or local protocol?
• All chemotherapy e-prescribed, no initiation of chemo and dose escalations not allowed by F2s, automatic warnings re blood levels, dose adjustments needed etc • Local protocols exist for Methotrexate prescribing at Addenbrooke's including a red sticker on the chart, informing the consultant in charge of the MTX treatment and a daily pharmacist check of the whole prescription chart. Without this, MTX should not be administered • Imperial Hospitals NHS Trust Clinical Chemotherapy Services Operational • Policies: Qualifications for entry on to the medical staff chemotherapy prescribing register Entry to the medical chemotherapy prescribing register is restricted to Oncology or Hematology Consultants, Associate Specialists and SpRs of grade ST3 or above, who have: o Completed the designated Imperial College Healthcare NHS Trust chemotherapy training programme o Been assessed as competent by one of the Trust chemotherapy prescribing competency assessors.

Of significant concern some of the comments indicate that protocols are not always adhered to (Table 6)

Table 6. Examples of breaches of protocol
• Local protocols not adhered to in all areas as evidenced by incident and by audit of discharge analysis • Prohibited by patient safety and GMC; pharmacy unaware of rules. Still pressure juniors to prescribe patients "regular medications" • Was routinely asked to prescribe & administer Cyclophosphamide & • Tacrolimus. I declined, but many FY2/CMT doctors did so, which made it difficult.

Q10 Do you have any additional comments e.g. other drugs / agents which require specific training?

Additional comments were received from 24 (23.7%) respondents. The comments are included in full in Appendix 4. A lack of training and knowledge of pharmacology for these and other agents was identified. Other classes of drugs were also a cause for concern including: “biologics” anaesthetic agents, thromboprophylaxis, anticoagulants.

Several of the comments suggest that better training in pharmacology is needed:
“Focus should be directed towards drugs/agents that have shown to be tricky to handle for previous junior doctors”

"In general the level of knowledge around pharmacology and prescribing is poor and seen as an annoyance rather than a vital part of patient care to be taken seriously"
"Increased training required on these types of medicines including blood monitoring"

Q11 Do you believe any further guidance or action is required on this issue?
Sixty seven (65%) respondents felt that this was indicated and 56 free text comments were received and these are included in appendix 4. Selected comments are included in Table 7.

Table 7. Selected comments regarding guidance or action required

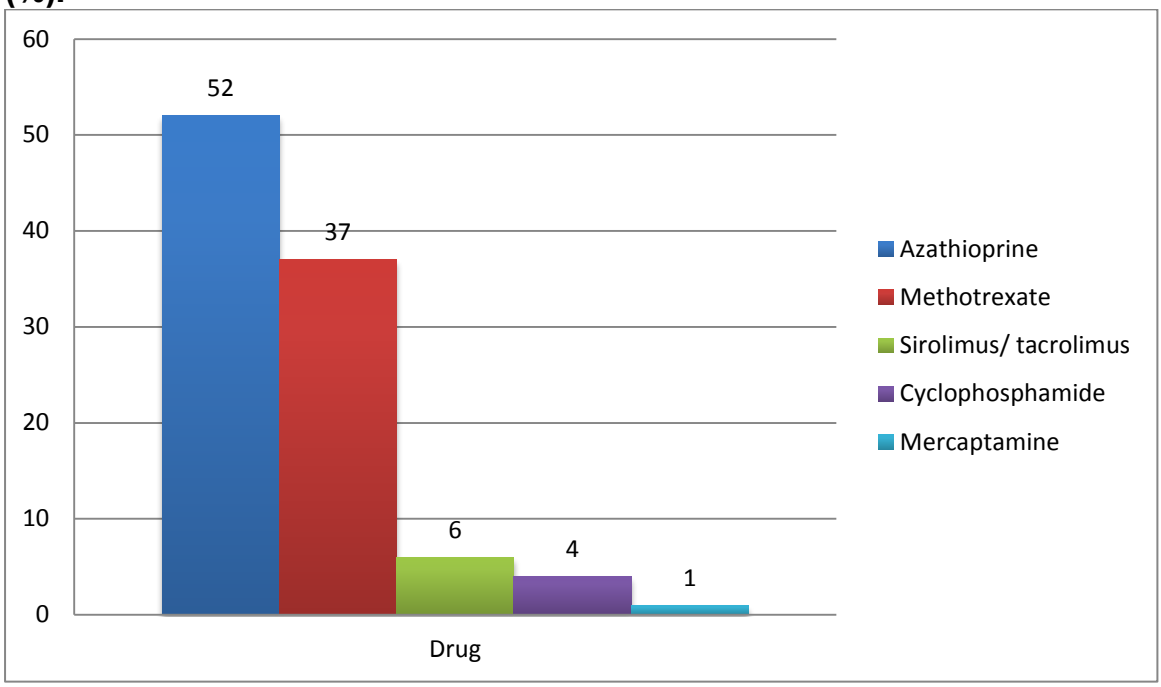
- Full guidance needs to be available which would specify which grades of medical staff should be expected to be able to prescribe chemotherapy and what training and proof of competence should be provided
- National guidance/position from relevant professional body to ensure safety and consistency with NHS
- There should be tight regulation around prescription of all cytotoxic drugs and immunosuppressant's. I believe that these restrictions are adhered to oncology but I am concerned that it may not be so easy to apply in other fields such as rheumatology/dermatology and junior doctors may have to pick up the prescribing if the patient is admitted acutely.

APPENDIX 3
SINGLE LONDON TRSUT INFORMATION

Dr Claire Mallinson President NACT UK provided the following data from a single London Trust.

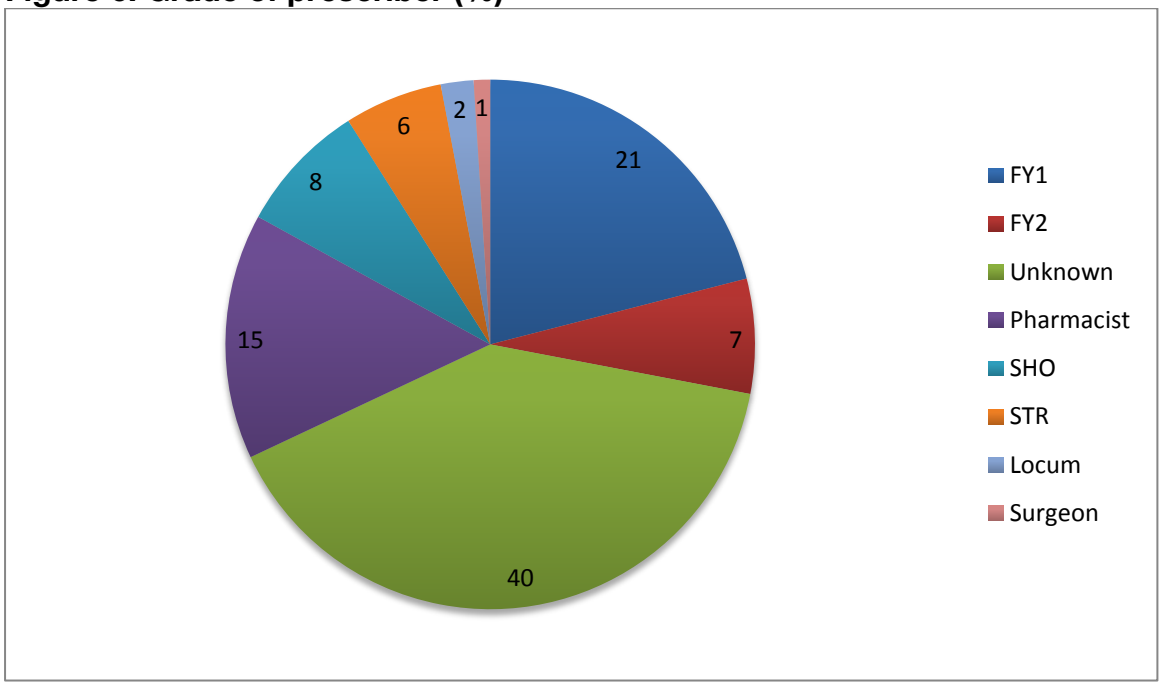
The data below is derived from the electronic discharge record searching for prescriptions for the following agents: azathioprine, methotrexate, sirolimus, cyclophosphamide, tacrolimus and mercaptamine. 240 items were identified over a 6 month period figure 5 shows the prescriptions broken down by agent. Methotrexate the agent most frequently cited in the questions above is the second most commonly prescribed. Overall 1 in 5 of were written by FY1 doctors.

Figure 5: Cytotoxic and immunosuppressant agents prescribed at discharge (%).



Analysis of the grade of prescriber for discharge all cytotoxic and immunosuppressant agents. A very similar pattern was seen for methotrexate alone with 19% prescribed by FY1 and 8% by FY2.

Figure 6: Grade of prescriber (%)



APPENDIX 4
ADDITIONAL COMMENTS FROM THE SURVEY

Q10. Do you have any additional comments e.g. other drugs/ agents which require specific training?

Increased training required on these types of medicines including blood monitoring.

Supportive medications e.g. calcium folinate with Methotrexate- Junior doctors often expected to chart these, prescribing errors common.

In general the level of knowledge around pharmacology and prescribing is poor and seen as an annoyance rather than a vital part of patient care to be taken seriously.

I believe the issue is that they are not aware what they are prescribing.

All new SPRs must pass chemo competency module before being allowed to prescribe cytotoxic treatment - this involves watching video ad completing 25 MCQs with suggested reading list.

We have a very strict guideline for chemotherapy in critical care. It has to be administered by a chemotherapy trained nurse (even for other indication). Prescribing for cancer has to be by oncologist (cons). Prescribing for other indication in critical care has to be by pharmacist-prescriber or cons intensivist intrathecal vincristine training in prescribing oral chemo and molecular therapies.

Anticoagulants, insulins, opiates, oral methotrexate for RA, Intrathecal Cytotoxics.

On discussion with the CMT they feel that they do not have sufficient training in prescribing immunosuppressant treatments such as methotrexate and azothiaprine which they be called to do at some stage as a trainee although they did not identify it as an issue in the oncology hospital.

Blanket restrictions may bring up new problems, e.g. on-going prescription of long-term treatments when admitted for other problems. There are other agents that are treated as cytotoxic in their medicines management, e.g. Ganciclovir, Flucytosine, etc.

To my mind there is training required for cancer chemotherapy, and training required for drugs handled as cytotoxics for non-cancer indications (e.g. Cyclophosphamide). Some monoclonals might be implicated also, I believe rituximab might be treated differently in different hospitals / settings

All done by ST3 and above clinical and medical oncology trainees who are competency trained.

Doctors in training need experience in complex prescribing and therapeutic drug monitoring and appropriately supported practice should be allowed not specific drugs, however whichever drugs/agents that have shown to be tricky to handle for previous junior doctors.

I have assumed you don't mean to include corticosteroid prescription in this survey

All trainees have specific training with regard to It chemo (i.e. not to give it) needs proper medical school to teach proper pharmacology

Most specialist services will be using potent drugs with potential for serious adverse effects, e.g. biologics

Anaesthetic drugs; thromboprophylaxis, antibiotics, antiosteoporosis Warfarin.

ALERT antibiotics require consultant ID or Microbiology authorisation before prescription.

Methotrexate is an issue as there are numbers of general medical patients on this long term and if FY doctors cannot re-write this drug on the chart, it will inevitably lead to incidents where it is omitted

Have some data on eDL prescribing of methotrexate and other cytotoxics, to inform the RCA recommendations for prescribing of these drugs.

Q.11. Do you believe further guidance or action is required on this issue?

It has to be made clear that only oncology SpRs or doctors at higher level can prescribe chemo agents.

Not in context of Rheumatology where this applies to very limited range of drugs.

I believe that for treatment of malignancy with anticancer treatment we have robust processes in place. I am however not sure that for the management of non-malignant conditions there are tight enough guidelines.

Unified UK wide guidance would be valuable.

Specific national guidance for level of doctor allowed to prescribe anticancer chemotherapy.

I think some national harmonisation would be sensible for consistency of experience for trainees.

Not at our centre.

Prescribing of cancer treatment is currently well controlled. However the prescribing of chemotherapy for non-cancer indications is less clear. There should be restrictions to ensure that long term side effects are discussed with these patients.

Not when an e-prescribing system is in use with clear guidance as to who can initiate or continue a treatment.

In my days as an oncology pharmacist I saw many "near misses" in prescribing cytotoxic drugs used in oncology and rheumatology. The dosing is very dependent on schedule, combination and patient and not easily checked by reference to reference materials. To avoid tragic consequences it seems essential that this highly specialised area of prescribing is left to those with a "feel" for the area, excepting that it seems reasonable that in a training role a Foundation doctor could perhaps prescribe but require counter signature by an experience prescriber.

Full guidance needs to be available which would specify which grades of medical staff should be expected to be able to prescribe chemotherapy and what training and proof of competence should be provided.

Further training on high risk drugs.

Formal agreed Nat competency based standard should be in place to ensure safe prescribing by SPR / staff grade or above - should not be done by less experienced staff in my opinion.

Rx of these agents should be restricted to SpR or above where possible. Local Directorates need to have specific policies on certain disease states so prescribing is only undertaken by appropriately trained staff.

National guidance helpful.

Oral chemotherapy and molecular therapies and AMPL Arsenic Atra BFM FRALLE protocols etc. complex protocols.

Review of all F1/F2 prescribing rights particularly in relation to high-risk drugs e.g. anticoagulants, insulin's, oral methotrexate for RA, opiates.

Specific training should be given prior to any prescribing of SACT national guidance/position from relevant professional body to ensure safety and consistency with NHS.

Review of grades allowed to prescribe. Previously worked in other Trusts where restricted to SPR and above.

Specific guidance for who can/cannot prescribe chemotherapy, and specialist training for those who are

National guidance and training package would be beneficial. National e-prescribing system and national protocol guidelines would be very helpful.

Can an FY1 rewrite a drug chart with methotrexate for example?

There should be tight regulation around prescription of all cytotoxic drugs and *immunosuppressant's. I believe that these restrictions are adhered to oncology but I am concerned that it may not be so easy to apply in other fields such as rheumatology/dermatology and junior doctors may have to pick up the prescribing if the patient is admitted acutely.*

Could be difficult to make a definitive list of affected drugs due to different perspectives and circumstances.

Standardised training on hazards (in prescribing), handling and administration. I would be supportive of only allowing more senior clinicians to perform these roles if capacity is not an issue (I include pharmacists and nurses in the term).

The guidance is very vague as to who is able to do what when prescribing or authorising SACT. It is very much open to interpretation. Standard training would be helpful for trainees at all levels (including ST3 doctors who now seem to have far less oncology experience than in previous years.

We have removed the role of prescribing at any time point from FY2 and CMT doctors. They will however manage complications under supervision.

Make sure that all Foundation doctors are aware of which protocols apply. Frequent updates if any new guidelines re-emerge.

Our practice feels safe, and we've had no problems. E-prescribing restricts those who can prescribe, but anecdotally from what I hear other centres aren't so robust.

I feel that in Gynaecology methotrexate treatment should be restricted to registrar / consultant doctors.

I'm not certain that you can restrict a fully qualified doctor's prescribing rights. Clearly within GMC good practice domains, no-one should be working out with their clinical 'competence' in the widest sense of the word.

Chemotherapy should never be prescribed by a Foundation Dr or Core Trainee. Other specialities that use immunosuppressants must make their own guidelines.

If other regions are allowing junior doctors to prescribe, administer or consent patients - it must be mandated that they do not.

Within NWCTC no but I am aware of issues for other specialities.

Training programmes, raising awareness esp. non cancer indications.

A clear list of the commonest drugs we should not be prescribing.

Requires proper medical school to teach proper pharmacology.

Training for juniors re prescribing (or not prescribing) immunosuppressant's especially for repeat prescriptions for patients admitted acutely with an acute condition (e.g. infection).

I think all doctors apart from FY1 doctors should be allowed to prescribe these drugs, with the usual considerations i.e. with accurate medication prescription list and after discussion with the patient.

Electronic expert advice systems should trap many errors.

Clear regulation regarding F1s; Guidance incorporated in existing documents regarding each grade in the next edition; concise please.

The electronic discharge summary is completed by many foundation doctors and as part of this, some drugs i.e. methotrexate may be transcribed on to the electronic document. This is always checked by the pharmacists, but additional guidance about this would be very helpful.

Should be clear who can prescribe immunosuppressants.

Was routinely asked to prescribe & administer Cyclophosphamide & Tacrolimus. I declined, but many FY2/CMT doctors did so, which made it difficult.

More training - as FY1 are frequently unsupervised on surgical wards then training at this level appears essential if patients are to get medications in a timely manner.

Clarification regarding the appropriateness of Foundation Doctors prescribing or administering Cytotoxics at all

My understanding is that neither F1, F2, CMT trainees nor indeed consultants in specialities other than oncology/haematology have any training in the use of chemotherapy.

We should introduce the training and get the Aside from intra-thecal administration, we should bring in a system that ensures Foundation trainees are taught to undertake prescribing and administering Cytotoxics under supervision. When they get to the CT1 year, there is a great likelihood that they will be expected to do this, never having had the opportunity to learn while in Foundation training.

Uniformity across the country would be very beneficial.

Exclusions to policy, e.g. methotrexate continuation (not initiation).

Cytotoxic drugs given for chronic non cancer therapy needs to be reviewed The initiation of these drugs should be done be highly trained people. The transcription

and administration of chronic drugs needs to have realistic and safe training and clear guidelines. Ward pharmacists have an enormous role to play in supporting the prescribers and dispensers of these widely used but potentially dangerous drugs. 7 day ward pharmacists in busy areas are required.

Doctors do sometimes transcribe from a chemotherapy prescription onto an inpatient cardex, this includes both anti-cancer anti-emetics and oral anticancer therapies. I presume that this isn't what you are concerned about.