

Pharmaceutical care of patients with cancer treated on non-cancer wards in the United Kingdom: a mixed method study

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Abstract

Objective: The objectives of this study were to identify and describe specialist cancer pharmacist support for the pharmaceutical care of patients with cancer treated on non-cancer wards. The study also explored the experiences and opinions of the pharmacy team concerning the pharmaceutical care of these patients.

Method: A mixed methods approach was used. A survey of the pharmaceutical care provided to patients with cancer treated on non-cancer wards across the UK was carried out. A focus group was conducted at a district general hospital. Main outcome measures included description of services provided by other Trusts from survey responses and themes from pharmacy staff experiences

Results:

Twenty two percent of respondents answering the question (29/134) confirmed that pharmacy staff on the acute oncology team would review these patients. The most frequently reported descriptions of other cancer pharmacy support were provision of advice on an individual situation basis (83/132: 63%) and lack of resource to provide a service (25/132: 19%) . The themes identified in the focus group discussion were: pharmaceutical care of patients, robust systems to support their care and provision of education and training. Participants expressed their dissatisfaction with the current service provision and lack of resources available to them. Specialist pharmacist advice was described as being available sometimes and participants recounted incidents in which they didn't know what to do or lacked the knowledge to deal with themselves.

Conclusion: The majority of respondents reported provision of *ad hoc* support from specialist cancer pharmacists for the pharmaceutical care of patients with cancer when they are treated on non-cancer wards. However, from their experiences generalist pharmacists would prefer to have more education and training to identify patients' pharmaceutical care needs in addition to *ad hoc* support.

Key messages

What is already known on this subject:

- There are no current national recommendations about the pharmaceutical care of patients with cancer admitted to general wards.
- There is a lack of published information on this subject.

What this study adds:

- Specialist cancer pharmacist support for the general pharmacy team looking after patients with cancer is variable and frequently lacks resource for formal provision.
- The generalist pharmacy team who took part in our focus group would like access to chemotherapy records and training about the pharmaceutical care of these patients.

INTRODUCTION

Patients with cancer may be admitted to wards in which the pharmaceutical care is provided by a generalist pharmacy team who may have little or no experience of cancer treatment[1]. There are national professional recommendations regarding pharmaceutical care of patients with cancer on cancer wards[2] but these recommendations exclude care provided on other wards.

The input of specialist cancer pharmacists to provide pharmaceutical care to patients with cancer has been studied worldwide in selected clinical situations[3-6]. These studies examined the input of specialist pharmacists alone and no comparison has been made with input from non-specialist pharmacists. Literature describing the need for additional specialist pharmacist support for the pharmaceutical care of patients with cancer on non-cancer wards is scarce.

Knez *et al*[7] evaluated the clinical interventions made by specialist pharmacists on cancer wards and when screening chemotherapy prescriptions in a production unit[3, 7]. This team concluded that pharmacist interventions had a significant impact on patient care and that pharmacists working at a higher level of practice made more complex interventions. These findings support the national recommendation that a specialist cancer pharmacist working at a higher level should be accessible for consultation[2] when screening prescriptions prior to dispensing. However, this model relies on the pharmacist working at a lower level, e.g., junior pharmacists, having the skills and knowledge to identify pharmaceutical care issues and recognise that they require support from another pharmacist.

Competency frameworks for specialist cancer care pharmacists have been developed for both the UK[8] and Australia[9]. However, there is no mandatory accreditation process in either country so a variation in the clinical knowledge and practices of individual pharmacists working within this specialism would be anticipated.

At Salisbury NHS Foundation Trust (SFT) in the UK, there is no formal arrangement for other pharmacy staff to seek advice from a specialist cancer pharmacist but this takes place on an *ad hoc* basis and is dependent on staff availability. This mixed methods study has been conducted to further explore this situation.

AIMS OF THE STUDY

- 1) To identify and describe specialist cancer pharmacist support for patients with cancer treated on non-cancer wards at other Trusts,
- 2) To explore the experiences and opinions of the pharmacy team at SFT concerning the provision of pharmaceutical care to these patients and investigate if further support from a specialist cancer pharmacist is required.

METHODS

A quantitative self-administered questionnaire of hospital pharmacy members of the British Oncology Pharmacy Association (BOPA) was developed to compare the *ad hoc* service provided at SFT with services at other Trusts. A focus group explored the experiences and opinions of the pharmacy team at SFT concerning caring for patients with cancer treated on non-cancer wards. Results from these quantitative and qualitative phases are presented here and used to develop recommendations for local service development.

a) Questionnaire and survey methodology

A questionnaire was developed (Appendix 1) containing both closed and open questions; no validated tool was available. Each question related to a single concept [10]. For most questions, fixed responses were used as only a limited number of response options were anticipated, to minimise questionnaire completion time and to encourage a higher response rate[11]. A statistician was consulted during the development of the questionnaire and usability testing, in the form of a 'Think Aloud'[12], carried out. Feedback provided by BOPA's audit and research (A&R) committee members was taken into account.

A web link to the final version of the Survey Monkey™ questionnaire was distributed by BOPA via email to the target participants, hospital-based cancer care pharmacists and technicians. The survey remained open for 8 weeks. Alternative survey distribution methods and bias are described in the Limitations section of the Discussion.

b) Focus group data gathering

All members of the pharmacy ward based teams, excluding cancer pharmacists, were invited to participate. Individual interviews were considered but it was anticipated that the interaction between participants at a focus group would better stimulate debate and promote reflection about service development[12]. An experienced healthcare professional with a

background within cancer and pharmacy services, aided by a psychology graduate, facilitated the group and obtained verbal informed consent from participants.

The facilitator used the topic guide (Appendix 2) to provide a framework for the focus group. An audio recording of the discussion, lasting one and a quarter hours, was made using a VN-731PC Digital Voice Recorder (Olympus, Japan). Both the facilitator and assistant provided feedback on the discussion that was used by the project pharmacist to gain a sense of the discussion before data analysis took place.

Survey Data analysis

A numerical coding framework for fixed responses to each question was developed and input to SPSS™ (IBM SPSS Statistics, USA). Responses to all questions were treated as nominal data. All data was manually entered into SPSS™ with data entry checked for any missing values that had not been coded. Data input was verified by another person. Descriptive statistical information, such as number and percentage of responses was obtained directly from SPSS™ but, for ease of data manipulation, data was exported to Excel™ (Microsoft, USA) for similar analysis of data subsets based on hospital type and geographical location. No further statistical analysis was carried out following advice from a statistician.

Focus group Data analysis

An initial transcription of the recording was made using speech recognition software (Dragon Naturally Speaking Recorder Ed 12, Nuance.com, USA) and adjusted manually by the project pharmacist to ensure that the transcription was an accurate account of the discussion. Coding using a line by line approach and thematic analysis[13] were carried out by the principal author. A framework method[14] was used to manage the data and promote transparent analysis without using a specific philosophical approach. Responses to all questions were assessed as a whole rather than analysing responses to each question separately. An inductive approach was used to develop initial codes which were refined and used to develop themes and their respective sub-themes. Each theme or sub-theme was mapped to one of three main themes. A second individual checked through the transcript and the coding framework in an attempt to reduce any bias introduced by the project pharmacist. A descriptive analysis of the themes identified was developed.

All participants were aware that the project pharmacist would be able to identify their voices however they understood that the data recorded would not be attributed to them by name instead a participant number would be assigned in the transcription. All digitally stored documents and the recording were transferred to an encrypted USB device held by the project pharmacist whilst availability of paper copies of documents was restricted to project team members and held securely to ensure confidentiality.

RESULTS_

Questionnaire response

A total of 168 responses were received. All but 8 responses were included in analysis. Five responses had been generated during testing of a draft version of the questionnaire and two responses were from individuals who did not work in the hospital setting. The eighth response was excluded because it was attributed to an individual who recorded a further, more complete response from the same IP address within a 15 minute period. With 160 analysable questionnaires from a total individual membership of 255 pharmacists and technicians in 2016 (personal communication, BOPA, 2016), the response rate was 63%. Not all questions were available to all respondents to answer resulting in the number of respondents differing between questions. For example, questions concerning functions of the acute oncology team (AOT) were only available when the respondent indicated that they had an AOT. A simplified version of the questionnaire flow is shown in figure 1. Not all questions were mandated hence analysis of non-responses to questions was considered inappropriate.

Types of hospitals

Respondents selected descriptions of the type of hospital from a list. It had been anticipated that all respondents would select a minimum of three descriptions falling into distinct groups: type of cancer hospital (tertiary referral, centre and/or unit), teaching status (teaching or non-teaching) and funding status (NHS or private). A tertiary referral centre provides a specialised service, in the text of this study the hospital would provide treatment to patients with rare cancers. Hospitals are designated as centres or units as part of their commissioning arrangements. In total 152 individuals provided a response to the question about hospital type (figure 2). The number of responses, shown in brackets, was greater from teaching (52) than non-teaching hospitals (26) which may reflect the greater number of staff generally employed at larger teaching hospitals although it is more likely to reflect the poor response rate to this question. Only 48 of the 160 respondents gave responses that fell into each of these three categories i.e., type of cancer hospital, teaching status and funding status.

Specialist cancer hospitals

Data relating to the services provided within specialist cancer hospitals was not gathered however, the survey was applicable where the specialist team from this type of hospital provide pharmaceutical support to another Trust. Eight respondents confirmed that they worked in hospitals only providing inpatient care to patients with cancer but only 3 of

these provided support to another Trust. One individual did not answer further questions and the remaining two respondents differed in their responses so no generalisable description of their services is possible.

Description of local service

A series of questions was asked about both the configuration of any specialist pharmacist support and description of the extent of support provided. Out of a total of 134 responses, twenty-eight confirmed that they had pharmacy staff working as part of the AOT reviewing patients with 91 reporting no pharmacy staff on the team and 15 did not have an AOT. Of those who have pharmacy staff working within an AOT the majority, 20, provide this service during normal working hours with a further 5 providing the service sometimes and 3 reporting a 24 hour service. With the exception of Scotland where 7 out of 15 respondents reported pharmacy involvement with the AOT, not having pharmacy staff on the AOT was the most frequent response in each other geographical location and mirrored the situation in Salisbury.

Respondents were asked which statement best described their local situation, see Table 1. Regardless of whether there were arrangements in place for a cancer pharmacy review (AOT or other specialist cancer pharmacist) or not, the majority reported that each clinical situation would be treated on an individual case basis as happens at SFT. Those who did not have cancer pharmacy review arrangements reported a lack of resource more often as the description of their service than those who did provide a service.

Table 1: Description of your local situation.

Description of local service	Total responses	Arrangements in place for cancer pharmacist review	No arrangements in place for cancer pharmacist review	Patients reviewed by AOT pharmacist
We would deal with each situation on an individual basis	83	46	31	6
This hasn't been an issue	7	1	6	0
Lack of resource to supply a service	25	3	21	1
Don't know	3	1	1	1
Other	12	6	5	1
Not applicable or missing	2	2	0	0
Total	132	59	64	9

Types of patients reviewed

Those who have arrangements in place for a cancer pharmacy rather than AOT review of cancer patients on non-cancer wards were asked which patients were reviewed shown in Table 2. Most reported that support could be requested. At SFT cancer pharmacist support is available on an *ad hoc* basis. It is more usual for this support to be requested when the patient is taking oral chemotherapy as an inpatient or if they have recently received cancer treatment.

Table 2: Description of cancer pharmacy support arrangements

Response	Number of responses
All patients with cancer will have support for their pharmaceutical care from a cancer pharmacist/technician.	2
All patients with cancer receiving chemotherapy/targeted treatments will have support for their pharmaceutical care from a cancer pharmacist/technician.	14

Response	Number of responses
Some patients with cancer will have support for their pharmaceutical care from a cancer pharmacist/technician selected against agreed criteria.	1
There is no direct support but we have care plans in place for some clinical scenarios and can ask for support if needed.	3
Support from a cancer pharmacist/technician can be requested if required by the pharmacy team.	30
Other scenario.	7
Missing date	2

Focus group results

Six pharmacists and one medicines management technician took part in the focus group. Participants ranged from newly qualified pharmacists to very experienced pharmacists who worked as generalists with a special interest in non-cancer clinical areas. Three main themes were identified from the focus group discussion: pharmaceutical care of the patients, robust systems to support their care with both themes underpinned by the provision of education and training in cancer care to the pharmacy team. The mapping of sub-themes to main themes is illustrated in Figure 3.

Pharmaceutical care

The pharmacy team found it challenging to provide pharmaceutical care to patients with cancer as they did not have sufficient knowledge of the clinical area and instead relied on the support of a specialist cancer pharmacist to identify some care issues. Participants acknowledged that in an ideal world all patients would be referred to a specialist pharmacist:

“they’ll be seen by the right team, the right pharmacist and they’ll resolve everything that needs resolving”

However, they recognised that this was not practicable so other options were discussed.

Throughout the discussion it became clear that a number of individuals felt dissatisfied with the current situation of *ad hoc* advice and reliance on a specialist cancer pharmacist:

“We do have a bit of a one-point of failure...if [the cancer pharmacist]’s not here, then we are sometimes struggling to get further advice.”

At the end of the focus group each participant was asked to describe a single issue that was important to them. One individual questioned:

“if the whole culture of being dependent on one or two people is actually perhaps not the way forward.”

They felt uneasy with their own lack of knowledge with one individual describing her reason for attending as:

“just want to see the best way of approaching it rather than scrambling through.”

Patients

Newly admitted patients will have their drug history verified by a member of the generalist clinical pharmacy team who may not have a background knowledge of cancer care. The pharmacy team often rely on the patient:

“Sometimes the patient’s quite the expert, aren’t they! “

Identifying if the patient is actively receiving anti-cancer treatment can be difficult:

“You might see in the notes, but actually accessing what they’re actually receiving is quite difficult.”

Discussion with the patient and a physical check of their medication are used to supplement checking the patient’s hospital and GP healthcare records. Members of the pharmacy team either didn’t know which other sources of drug history information to use or didn’t have access to them.

Poor documentation about how the treatment plan for any oral chemotherapy had been altered since the patient admission was reported:

“Are they supposed to be receiving their oncology drugs as well whilst they’re an inpatient or have they been held for some reason. It can be difficult to work out.”

“The patients can have change to their treatment but not necessarily explained to them why they’ve been changed.” Participants expressed frustration when the issue of discussing medication changes with the patient was suggested as a component of ideal pharmaceutical care as this was:

“not normally possible”.

The pharmacy team reported that they didn't ask patients specifically about their cancer but rather asked about their medications. This emphasis on medications rather than clinical condition is not an unreasonable stance for a pharmacy team member. Reliance on the patient during drug history taking did help to ensure that the patient was at the centre of the pharmaceutical care.

Checking medication

One participant wanted more guidance and some training for checking the clinical appropriateness of already dispensed supplies as:

"people being responsible to sign off medications that they don't know anything about".

In particular they wanted to know how to check that the dose/medication is still suitable for the patient:

"I think you would probably yourself look up and look at the dosage and see if that corresponds to the BNF and the datasheet."

Some individuals:

"struggled to know which [test results they were] checking"

Chemotherapy regimens are used as the primary source for checking chemotherapy prescriptions prior to dispensing but these documents were not mentioned during the discussion

Robust systems

There was a lack of clear referral processes and responsibilities for all clinical scenarios. Where processes were in place they were not robust and relied on the presence of key individuals. Throughout the focus group participants were critical of the current systems to address both the medical and pharmaceutical needs of cancer patients:

"if we can get a more robust process in place then maybe we could streamline the process a bit better."

The current local oral chemotherapy policy was drafted in response to a NPSA alert [15] in which the requirement for specialist prescribing of oral chemotherapy was outlined. Few present at the focus group were aware of the local policy document and there was confusion about its content:

"whenever I.....ask about what policy is, you always seem to get slightly different things from different people."

The haematology/oncology teams are sometimes contacted by the pharmacy team directly or via an oncology pharmacist. Although this process acts as a safety net to ensure that the patient is reviewed when necessary by an appropriate cancer team, the participants felt that :

"sometimes we end up chasing around after things we don't really understand trying to get them to do things"

Providing some educational training or decision aides around communication pathways may help to inform the pharmacy team about:

"who you need your doctors to contact",

.i.e., the acute oncology or haematology team. Although *"it's for a doctor to speak to a doctor"*, one pharmacist recounted that an acute oncology nurse had asked the pharmacist to contact her as:

"you ring me and let me know 'cause the doctors do not talk."

Further clarity was requested:

"to be sure who else we are supposed to be informing. We're supposed to encourage the doctors and that lot to inform the team that is looking after the patient for their cancer".

The current system of asking for confirmation of continuing prescribing of chemotherapy or targeted treatments when patients are admitted or discharged was described but this does not address who is monitoring care relating to this treatment during the rest of the admission. Participants highlighted their concerns about this omission during the focus group:

"Sometimes if they are seen at the beginning and towards the end of their admission, and no oncology or haematology persons seen them, no one else is checking that."

Education and training

Many participants expressed their desire to have training or education in the field of cancer care so that they could provide better care for these patients and be more certain that they had identified and addressed their care needs. Throughout the session the language used by some individuals re-enforced how strongly they felt about current practice. One individual *"always [felt] very out of my depth"* and described *"scrambling through"*.

Participants were able to identify cancer treatments to some extent but found it easier to identify some cancer treatments if the name contained *"the three letters"*, i.e., if it ended with mib or nib or mab. There was limited discussion about how to identify cancer patients, particularly those on chemotherapy, but most were identified:

"at the moment is the handover sheet and the flagged oncology thing [register]"

The nursing handover document is commonly used by members of the pharmacy team to provide a brief clinical summary of the inpatient admission. Some pharmacists were aware of the existence of an oncology register of patients being treated but “*I don’t really understand [the patient inclusion criteria] to be honest*”.

All but one of the pharmacy team members taking part in the focus group were unfamiliar with our current prescriptions for chemotherapy most of which are generated using an electronic prescribing system. The current mixture of different prescription types and their uses in different scenarios resulted in pharmacists finding:

“*it confusing that some [chemotherapy medication is prescribed] on inpatient chart some not*”.

Most participants complained that :

“*We haven’t got access to Aria which is the electronic cancer prescribing system. We don’t have access to that*”

which they wanted to provide “*visibility about what treatment they are having*”.

DISCUSSION

Although there have been studies examining the input of specialist cancer pharmacists within secondary care settings to the pharmaceutical care of patients with cancer, these studies have been limited to screening chemotherapy prescriptions[7] or alternative clinical scenarios such as providing care on a cancer ward[5]. In this study, pharmaceutical care provided to patients with cancer when admitted to a non-cancer ward has been examined.

Some of the issues raised during the focus group in this study were similar to those described by community pharmacists when discussing their interactions with patients with cancer[16]. The community pharmacists were less confident about providing support to these patients as they “don’t have that depth of knowledge” on this topic compared with other patient groups they usually support. The provision of additional training for community pharmacists and obtaining advice from hospital based cancer pharmacists, where needed, were described and, mirrored some of the recommendations in this study.

Despite finding in this study that the provision of *ad hoc* advice within secondary care is common practice across the country, no published information about the effectiveness of this approach was found. In addition, the nature of the support provided by cancer pharmacy team members at other Trusts was not captured or described in the national questionnaire but could be the subject of future survey.

Although the current *ad hoc* support from a cancer pharmacist in Salisbury is in keeping with the most frequent service configuration for the rest of the country, the focus group discussions indicated that this provision did not fully meet the needs of the pharmacy team. Local data (not presented) indicated that specialist pharmacist advice is infrequently sought in practice but focus group participants recounted times when this advice had been useful and described this as the ideal model of care. However, participants also discussed their anxiety when a specialist pharmacist was not available for consultation. In this study 25 out of 132 respondents reported that they lacked the resources to provide specialist pharmacist support for this patient indicating that the anxiety expressed by focus group participants may be shared at other Trusts and workload of specialist pharmacists may hinder this type of service provision. The desire of focus group participants to increase their knowledge in this clinical area so that they are less reliant on specialist pharmacists will influence the development of the local service and may be applicable to other Trusts who took part in the national survey.

Patients are an important source of information when taking their drug history however, an over-reliance on them was described in the focus group due to the lack of other available sources to identify active treatment cancer treatments. Use of patient hand-held chemotherapy treatment diaries was not discussed by the generalists at the focus group but would be used as a source of information on the local cancer ward. Availability of hand held records for patients is considered to be good practice and their use by healthcare professionals encouraged[17]. Actively asking the patient about cancer treatments in case these have been inadvertently omitted was also not raised. One pharmacist did describe asking patients with prostate cancer about hormonal treatments supplied by their GP but no other potential indicators of missing medication were discussed. The development of care plans for patients[18] with specific cancers or receiving specific anti-cancer treatments may help to guide history taking and be used by the pharmacy team to develop individual patient pharmaceutical care plans.

Difficulty in establishing if the patient was still receiving cancer treatment prior to admission was described in this current study: these medications are not often included in the GP records to which the clinical pharmacy team have access. A similar lack of access by community pharmacists to information about individual cancer treatment records for patients has been highlighted as an information gap that could result in patients receiving medications that interact with their cancer treatments or cancer treatment related side effects not being recognised by generalists in primary care[17].

Although hospitals with an emergency unit in England should have an acute oncology team[19], pharmacists are classified as extended members of the teams and inclusion of a pharmacist on the team reviewing patients is not mandatory. Most responses to the study questionnaire stated that, like at Salisbury, they did not have a pharmacist clinically reviewing patients as part of the AOT. More frequent inclusion of a clinical pharmacist on an AOT is a relatively recent development that is still maturing and there is a lack of published information to describe the services they provide.

In an ideal situation the treatment plan would be clearly documented in the healthcare record. This poor documentation may reflect that lack of knowledge in this area by the admitting medical team. Some Trusts include an oncology pharmacist on their acute oncology team; widening the multidisciplinary nature of the acute oncology team should be considered so that these patients routinely have access to a specialist pharmacist and providing a more formal referral process. Although this focus group concerned the needs of the pharmacy team the needs of other members of the multidisciplinary team could be an area for further study which in turn could modify the expectations of the pharmacy team.

Implications for policy and practice

An initial action plan for developing the cancer pharmacy service was developed, see Table 3, in which ease of achievability and impact have been considered.

Table 3: initial action plan

Issue	Priority	Action
Eprescribing access	1	Develop a training package for the general pharmacy team on how to use Aria and how interpret each screen/prescriptions. Pilot on medical admissions unit where most patients with cancer are initially seen when admitted. Arrange for access for other relevant staff members. Provide training to rest of department.
Drug history	2	Develop a generic chemotherapy patient drug history taking guidance checklist in which sources of information are outlined. Include how to get information from other hospitals.
Discuss issues with haem/onc	3	Discuss how oral chemo policy can be improved, countersignature process, communication pathways and clearer treatment plans.
Oral chemo policy	4	Redraft oral chemotherapy policy so that actions are more explicitly described.
General education	5	Devise initial education program. Review training provided by another hospital and then develop a local version if needed, Training on: <ul style="list-style-type: none"> • communication pathways, • oral chemo policy, • how to screen a prescription for chemo previously dispensed, • pharmaceutical care plans • how/when to order further supplies.

Limitations

The survey provided an overview of the specialist pharmacist support at other responding Trusts. There were however, limitations to the questionnaire design and administration method. Cancer pharmacy service configurations are varied and hence a complex questionnaire design in which some questions could be skipped was developed. More detailed participant information outlining some common service configurations and defining hospital types may have resulted in higher response rates for individual questions and improved the data quality. The number of respondents who did not indicate if they worked in an NHS or private hospital highlights potential data quality issues. However, the responses returned were useful to provide a broad overview of the services provided at other Trusts, supporting the view that there is not a simple single solution to this issue. A few participating pharmacists commented that they struggled with this subject.

It was not possible to determine whether or not an individual had provided more than one questionnaire response. Alternative distribution methods were considered during the project design phase but rejected as the target population would not have been contacted directly, potentially resulting in an unacceptably low response rate and introducing different biases. It was accepted that more than one response from each hospital was possible, potentially over-representing hospitals with larger cancer pharmacy teams.

Prior to the focus group discussion, the project pharmacist had been an advocate of increasing the specialist pharmacist staffing levels to address any deficiencies in the pharmaceutical care of these patients. Some participants were aware of these views and that the project pharmacist would be able to identify their voices but this did not seem to influence what was said to any noticeable degree. Due to the size of the department in Salisbury, it was not possible to hold more than one focus group however, there was good agreement by participants about both their views on the current specialist pharmacist support and how to take the local service forward. Potentially repeating this qualitative study at a larger Trust with more than one focus group would allow comparison of views within a Trust and help to indicate if the issues raised in Salisbury are specific to this hospital or are more generally applicable.

CONCLUSION

This study showed that the provision of specialist cancer pharmacist support to the pharmaceutical care of cancer patients on non-cancer wards is variable across the UK. Some Trusts include a pharmacist on their acute oncology team reviewing these patients. The *ad hoc* service provided at SFT reflects the most common service configuration however, the focus group discussion highlighted that this service does not meet the local needs of other members of the general pharmacy team who would like more education and training to identify patient's pharmaceutical needs. This support could be provided in a variety of formats including additional educational sessions, generic pharmaceutical care plans and, where needed, access to a specialist cancer pharmacist. Access and training relating to use of the chemotherapy eprescribing system must be provided in order to ensure that the whole pharmacy team can access relevant information. Additional tools such as a drug history checklist should be developed in order to support the wider pharmacy team.

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REFERENCES

- 1 Pugh, A., Rogerson, H., Cosh, H. et al. Acute oncology: a developing sub-specialty. *Br. J. Nursing* 2015;24 Suppl 16: S18-25.
- 2 British Oncology Pharmacy Association (BOPA). Chemotherapy Service Specification: Medicines Optimisation, Safety and Clinical Pharmacy Workforce plan. 2015 Available at http://www.bopawebsite.org/contentimages/publications/Clinical_pharmacy_workforce_final2015.pdf Accessed 20.03.2016.
- 3 Knez, L., Laaksonen, R. and Duggan, C. Evaluation of clinical interventions made by pharmacists in chemotherapy preparation. *Radiol. Oncol.* 2010;44 (4):249-256.
- 4 Hockel, M. Ambulatory chemotherapy: pharmaceutical care as a part of oncology service. *J. Oncol. Pharm. Practice* 2004;10:135-140.
- 5 Wang, Y., Wu, H. and Xu, Feng. Impact of clinical pharmacy services on KAP and QOL in cancer patients: a single-centre experience. 2015 *BioMed Research International*, article ID 502431

([http:// dx.doi.org/10.1155/2015/502431](http://dx.doi.org/10.1155/2015/502431)).

- 6 Cehajic, I., Bergan, S. and Bjordal, K. Pharmacist assessment of drug-related problems on an oncology ward. *Eur. J.Hosp. Pharm.* 2015;22:194-197.
- 7 Knez, L., Laaksonen, R., Duggan, C. and Nijjar, R. Evaluation of clinical interventions made by pharmacists on cancer services. *Pharm. J.*, 2008;208:277.
- 8 British Oncology Pharmacy Association (BOPA) Education and Training Committee. Competency Framework for Specialist Oncology Pharmacists. 2004 Available at [www.bopawebsite.org/ publications/doc/ bopa-guidance/P6-BOPA](http://www.bopawebsite.org/publications/doc/bopa-guidance/P6-BOPA) Accessed 20.03.2016.
- 9 Carrington, C., Weir, J. and Smith, P. The development of a competency framework for pharmacists providing cancer services. *J. Oncol. Pharm. Practice* 2010;17 (3):168-178.
- 10 Peterson, R.A. Constructing effective questionnaires. London: Sage Publications, 2000.
- 11 Leung, W-C. How to design a questionnaire. *Student BMJ* 2001;9:187-189.
- 12 Neale, J., ed. Research methods for health and social care. London: Palgrave Macmillan, 2009.
- 13 Braun, V. and Clarke, V. Using thematic analysis in psychology. *Qual. Research In Psychology* 2006; 3, pp77-101.
- 14 Smith, J. and Firth, J. Qualitative data analysis: the framework approach. *Nurse Researcher* 2011;18 (20):52-62.
- 15 National Patient Safety Association (NPSA). Patient Safety Risks of Incorrect Dosing of Oral Anti-cancer Medication, NPSA/2008/RRR001. 2008 Available at: www.npsa.nhs.uk Accessed on line 20.03.2016.
- 16 Dalby, M. and Oakley, C. Community pharmacy and support for patients who take oral anticancer medication. *Pharm. J.* 2018 Available at [https://www.pharmaceutical-journal.com/opinion/correspondence/ community-pharmacy-and-support-for-patients-who-take-oral-anticancer-medication/20204570.article](https://www.pharmaceutical-journal.com/opinion/correspondence/community-pharmacy-and-support-for-patients-who-take-oral-anticancer-medication/20204570.article).
- 17 Lewis, J. How to support cancer patients in community pharmacies. *Pharm. J.* 2017 Available at [https:// www.pharmaceutical-journal.com/learning/learning-article/how-to-support-cancer-patients-in-community-pharmacies/20202377.article](https://www.pharmaceutical-journal.com/learning/learning-article/how-to-support-cancer-patients-in-community-pharmacies/20202377.article) Accessed 30.03.2018.
- 18 Hudgens, J. R. and Chirico, M. J. Instructional design and assessment: a course introducing the principles of pharmaceutical care. *Am. J. Pharm. Ed.* 2010;74(7), article 131:1-8.
- 19 National Chemotherapy Advisory Group. Chemotherapy Services in England: Ensuring quality and safety. 2009 Available at <http://tinyurl.com/kt69zx4> Accessed on 30.03.18.

Figure 1: Simplified Questionnaire Flow

Figure 2: Types of hospitals returning questionnaires

Figure 3: Mapping of sub-themes to main themes from the focus group