



## Perceptions of the hospital pharmacist in oncology care

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The growth of oncology pharmacy is undoubtedly raising health care in hospitals. Yet, it also creates concerns for pharmacists, such as cytotoxic preparation. Two recent surveys of EAHP members reveal the developing perception of their role and importantly, hot issues affecting their working lives.

### Introduction

Two recent surveys reveal that most pharmacists feel their role in multidisciplinary oncology care has strengthened in the past five years, despite the increasing complexity of treatment.

Hospital pharmacists are involved in every aspect of drug treatment in hospitals, yet there are a few areas where both their added value and intensity of support are more dominant. Notably, these areas are intensive care medicine, infectious diseases, pain management, paediatrics and oncology. However, the way how this is practised varies by the type of hospital, country and possibly also by region.

*Pan-European Practices in Hospital Pharmacy* shares among EAHP members how hospital pharmacists in different settings organise their practice and services. In this article, we focus on the achievements and also the concerns of hospital pharmacists in Europe as we support hospitalised oncology patients. To this end, we surveyed groups of pharmacists on two occasions. During the 2008 EAHP Maastricht congress we first asked individual hospital pharmacists how they were involved in oncology care (congress survey). In a second step, we sent a slightly modified country survey to the EJHP country correspondents to obtain country-wide information (country survey).

For a proper understanding of the findings, some observations have to be made. Although oncology care will be part of practice in almost all hospitals, both scope and extent will vary by type of hospital and also large differences between countries exist. The differences

between countries were already clear from the 2005 EAHP survey. Countries with 75% or more of hospitals having a dedicated oncology IV admixture service are: Austria, Belgium, Germany, Luxembourg, the Netherlands, Norway and Spain. Fewer than 40% of hospitals have such a service in the Czech Republic, Finland, France, Greece, Hungary, Poland, Slovakia and Slovenia. Naturally, care in specialised oncology centres will be more advanced and extensive than in smaller hospitals. About 20% of hospitals among respondents to the congress survey compound fewer than 25 infusions a day and about 25% more than 100 preparations a day. These larger hospitals will have dedicated facilities and oncology pharmacists and their involvement in the oncology team is usually more pronounced.

Support can vary from dispensing drugs for reconstitution and administration (by nurses) on the ward, through (de)centralised preparation of all medications by the pharmacy, up to full integration in the oncology team. When fully integrated, hospital pharmacists will advise on all aspects of drug treatment, including supportive care, pain management, stomatitis care, anti-emetic and laxative protocols, etc.

The safe handling of cytotoxic drugs requires specific knowledge, for which in most countries hospital pharmacists and technicians receive special training. To protect both the products and the staff, preparation of infusions in a protective environment (laminar flow hood, biosafety cabinet and isolator) is now standard practice. In most pharmacies

preparation takes place in special preparation suites with conditioned air, adding even more protection.

### Major safety concerns in providing oncology pharmacy support

- The risk of mixing up patients and/or medicines (this may occur at any step from prescribing to administration) or route of administration (like inadvertent intrathecal administration of a drug like vincristine)
- Providing the right dose, in particular in repetitive dosing schemes
- The risk of contamination/needle stick injury/spill and subsequent exposure to pharmacy or nursing staff
- High workload and limited possibilities to train pharmacy staff

Many actions in hospital pharmacy are aimed at reducing these potential risks. Groundbreaking work has been performed by the European Society of Oncology Pharmacy, which publishes a Quality Standard for the Oncology Pharmacy Service (QuapoS) in many European languages, updated every three years.

A special point is the handling of cytotoxic products by pregnant technicians and nursing staff (or those who wish to become pregnant). Of course, any possible exposure to cytotoxic contamination is to be avoided by all staff, not just by those who are pregnant. Nevertheless, uncertainty and lack of training may raise anxiety, increase stress and the chance of spills/needlestick injuries, and as such needs attention from management. For newly-introduced medicines the available dosage forms can be limited,

sometimes requiring the preparation of multiple vials or leaving a redundant excess of (expensive) drug. Sometimes we have to wait for better dosage units until generic products enter the market seeking a competitive advantage. The same applies to the availability of stability data, sometimes unnecessarily complicating the logistic process, or the lack of flag labels that can be used as a control mechanism in reconstitution protocols. We cannot avoid the feeling that such standard pharmaceutical aspects are badly overlooked when a new product is introduced. In the coming issues of EJHP we will have several articles illustrating the poor information status and how hospital pharmacists, by doing the necessary stability and compatibility studies ourselves, try to overcome the practical barriers to efficient handling of drugs.

Hospital pharmacists are well aware of the added value they can have in oncology care, but are physicians and other hospital staff also aware of this, and to what extent do they accept hospital pharmacists as equal partners? Most pharmacists surveyed had the feeling that their role in multidisciplinary oncology care had strengthened in the past five years. But it is still interesting to see the differences in the position of hospital pharmacists in the oncology team in different countries. The country survey results suggest that in some countries, i.e. France, Ireland and Spain, hospital pharmacists are held in higher regard than in other countries, for example, Hungary and Norway. This correlates quite well with the acceptance into the team (reported most strongly by France, Ireland and the UK). However, Ireland also raised the most concerns (see page 58) so they do not appear to have the most job satisfaction and seem to be under pressure.

To conclude, the landscape of oncology pharmacy is changing rapidly. With the introduction of biological and targeted therapies, increasingly with small molecules, the risk in handling products is rapidly declining. The newer products in most cases are safer, removing a lot of the tension around drug preparation in the pharmacy.

In the next pages you will find a summary of the results of both the congress and the country surveys.

## Reference

Quality Standard for the Pharmacy Oncology Service (QuapoS 2003), Institute for Applied Healthcare Sciences, 24939 Flensburg, Germany. ISBN 3-923913-07-9.

# Oncology pharmacy survey results

## Introduction

The congress survey was completed by 57 pharmacists from 17 countries at the 2008 EAHP Congress, and the country survey by 19 pharmacists from 10 countries via EJHP country correspondents. In the congress survey, respondents were asked to reply individually; in the country survey they were asked to respond from a general point of view, for the situation countrywide. In the congress survey, 35 of the 57 responses were from just three countries: Belgium, the Netherlands and the UK. In the country survey, two people each replied from Finland and the UK (England and Northern Ireland), while four people responded from Ireland and five from Switzerland. Combining the two surveys, the countries that took part were Austria, Belgium, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Norway, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the UK.

## Pharmacists are in a wide range of roles and hospitals

The country survey revealed a wide range of positions held and types of hospital worked in. Around 50% of respondents said they worked in an academic/teaching hospital and were a principal hospital pharmacist or manager with special responsibility for cytotoxic preparation. The latter was identical in the congress survey. A more detailed question in the country survey revealed that nearly all had responsibility for drug preparation, most also advised other professionals but only a few were involved with patient counselling (Table 1).

**Table 1: Country survey: responsibilities**

Responsibilities	No. of responses
Drug preparation/reconstitution	18 (95%)
Formulary/drug selection	10 (53%)
Procurement	9 (47%)
Patient counselling	3 (16%)
Advising nurses	15 (79%)
Advising doctors	14 (74%)
Note: multiple responses given (n = 19)	

## What are the issues around handling cytotoxic drugs in your country?

In response to this question, 10 out of the 17 answers given by the country survey mentioned safety, but the other topics mentioned ranged widely including organisational matters and handling of chemotherapeutic substances. The four Irish respondents together raised several concerns: no QA or agreed standards, no national peer groups, poor facilities, external pressures to ignore safety limits, workload, capacity planning, diminishing financial resources, training, centralisation, staff exposure and repetitive strain injury. General safety concerns also bothered 57% of respondents to the congress survey, while needlestick injuries were singled out as a topic of particular concern.

Only one out of the 57 respondents to the congress survey mentioned "Involvement of pregnant women in preparation" as a concern, and when the country survey respondents were asked about this, it was possible for all

**Table 2: Country survey: ranking of important issues in cytotoxic reconstitution**

Factors affecting the reconstitution of cytotoxic drugs	Importance		
	Low	Medium	High
Ease of use, e.g. simplified reconstitution	5%	16%	79%
Vials containing typical daily doses	58%	37%	5%
Breakability of container	26%	48%	26%
Large stopper for easy needle insertion	74%	16%	10%
Labelling - ease of identification	11%	26%	63%
Stability of the reconstituted solution	21%	37%	42%

Note: multiple responses given (n = 19)

**Table 3: Congress survey: ranking of important issues in cytotoxic reconstitution**

Factors affecting the reconstitution of cytotoxic drugs	Least important	Most important
	No. of responses	
Ease of use, e.g. simplified reconstitution	21	8
Vials containing typical daily doses	7	10
Breakability of container	6	8
Large stopper for easy needle insertion	4	19
Labelling - ease of identification	7	6
Stability of the reconstituted solution	10	4
No response	2	2

members of staff who were either pregnant or planning to become so to avoid working with cytotoxics.

## How comprehensive was your training?

Some 60% of the congress survey respondents replied “good” while only 5% considered it “poor”. This led to the participants of the country survey being asked: “How are technicians and pharmacists trained in the handling of cytotoxic drugs in your country?”. Eighty-three per cent answered “on the job”, while 17% were required to have an academic/examined course of training.

## Factors affecting cytotoxic reconstitution

Table 2 shows that stopper size was regarded as the least important factor affecting reconstitution by respondents, while ease of use and labelling were most important.

People answering a similar question in the congress survey came to the same conclusion about stopper size and gener-

al ease but rated stability of the resulting solution more highly than an easy-to-read label (Table 3).

The accidental breaking of a glass vial while handling during preparation (and not due to falling) was an issue of special concern to only 16% of the country survey respondents. While 14% considered it the least important issue in the congress survey, 11% considered it the most important. This question was included because apparently the quality of glass used in vials, etc. varies widely and in some countries it is an issue. Belgium, Italy, Norway, Switzerland, the Netherlands and the UK are the countries that appear most concerned about this from the congress survey.

All of the respondents in the country survey had a spill kit/breakages policy on each ward. This suggests that the 14% of respondents who raised “contamination/spillage risk to staff” as an issue of special concern at the congress were actually worried about contamination. Similarly, it was obvious from the

responses at the congress that flexibility in package sizes is seen as vital from a safety and efficiency point of view, thus this question was not repeated in the country survey.

## Regard for hospital pharmacists

When asked if as a hospital pharmacist they felt highly regarded by the multidisciplinary oncology team, 86% of the congress survey respondents answered in the affirmative (Table 4). Seventy-nine per cent felt more proud of their role now than five years ago. The latter figure came out as 73% when country survey respondents were asked: “Do you think that hospital pharmacists are highly regarded by the multidisciplinary oncology team in comparison to five years ago in your country?”

## Level of integration into the multidisciplinary team

When asked about integration levels, the results from the country survey show that 100% of respondents dispense drugs according to a prescription and 95% were regarded as experts in the preparation of cytotoxic drugs, but only one-third felt like full members of the oncology team.

### Additional comments:

**Finland:** “Pharmacists (Bachelor degree) work daily in the main oncology wards and coordinate availability of cytotoxic doses and thus implementation of treatment protocols.”

**Hungary:** “We are also consulted on the price of cytotoxic drugs.”

**Ireland:** “We are integrated into the provision of oncology clinical trials to patients.”

“In my hospital we have a clinical pharmacy team working in oncology and haematology which supports the manufacturing unit and links us directly with the medical and nursing teams and the patients.”

**Switzerland:** “We are integrated in the oncology team and collaborate together.”

**Table 4: Congress survey: are hospital pharmacists highly regarded by the multidisciplinary oncology team? (n = 57)**

Position	Total responses
Strongly agree	20
Agree	29
Disagree	2
Strongly disagree	0
Do not have such a team	5
No response	1

**Table 5: Country survey: level of integration in the oncology team**

Level of integration	No. of responses
We deliver drugs that are requested/ prescribed	19 (100%)
We are consulted as experts on the preparation of cytotoxic drugs	18 (95%)
We are also consulted as experts on other aspects of cytotoxic drugs	15 (79%)
We are involved in development and validation of treatment protocols	9 (47%)
We are fully integrated in the oncology team as equals	6 (32%)
Other	5 (26%)

Note: multiple responses given (n = 19)

## Conclusion

Today, oncology pharmacy is one of the main areas in hospital pharmacy. This activity has gained importance over the past years but some aspects still need further development. The two surveys show heterogeneity in the role hospital pharmacists have in oncology care. The last years have seen progress in the way pharmacies prepare cytotoxic drugs in a dedicated centralised facility, although in several EU countries this concept is still under development.

Centralised preparation is important to develop as it demonstrates the added value of hospital pharmacists in oncology care. It supports the building of good relations with the physicians and nurses and can be a fruitful starting point to participate in the multidisciplinary oncology team. The surveys show that this aspect generally is not well developed and should be enhanced. The success of this approach will partially be dependent on the presence of specialised knowledge and skills, and for that the handling of cytotoxic drugs should become part of the academic training of pharmacists.

We as the *European Journal of Hospital Pharmacy* aim to contribute to your knowledge in oncology/haematology by publishing high-quality contributions on this subject on a regular basis.