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Dutch hospital pharmacy — perspective from a preregistration trainee

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Hull and East Yorkshire Hospitals NHS Trust has set up an exchange programme with Isala Klinieken, Zwolle, the Netherlands, for Dutch hospital pharmacist trainees to experience clinical pharmacy practice in the UK and for UK pharmacists to return to see practice in the Netherlands. Until 2004, this process had been one way, with Dutch hospital pharmacists coming to the UK. On noting the Royal Pharmaceutical Society's provision for an EU placement as part of the preregistration year, I explored the possibility of going to the Netherlands. The Society required a formal proposal detailing what was to be accomplished and how the placement related to training aims. I was pleased when, with the written support of my relevant line managers both in the UK and the Netherlands, the proposal was accepted by the Society.

I spent a month in the Netherlands in the 1,150-bed Isala Klinieken hospital looking at many of the areas of work that the pharmacy is involved in, shadowing the staff, examining the structure and working practices, and identifying the differences and similarities.

The staff

There are three types of staff equating to the UK positions of pharmacy assistant, pharmacy technician and pharmacist. There are no graded positions.

A significant difference between the Netherlands and the UK is in the responsibilities of pharmacy technicians. Dutch technicians (called pharmacists' assistants in the Netherlands) have more responsibilities than their UK equivalents. They undergo a three-year full-time college course, starting their jobs after completion. Prescriptions coming through the pharmacy are usually seen and dispensed by the pharmacists' assistants and returned to the ward before being checked by a pharmacist. Pharmacists' assistants have a greater degree of independence from pharmacists than their UK counterparts

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and make clinical decisions. One responsibility is judging the significance of drug interactions on prescriptions that come to the pharmacy. Pharmacists' assistants are legally liable for the dispensing they release and the decisions they make. This autonomy seems to result in fewer service bottlenecks with pharmacists' assistants handling the day-to-day running of the pharmacy. Pharmacists' assistants are also "on call" and will attend the hospital when necessary. The roles and responsibilities of the pharmacists' assistants indicated how effective the Society's current drive to develop technician roles could be if the present momentum continues.

Pharmacists undergo a six-year degree involving hospital and community placements. If they wish to pursue a hospital career this is followed by a four-year "hospital pharmacist in training" period. The level at which the pharmacists' assistants practise is important because pharmacist numbers are limited in the Netherlands. Isala Hospitals currently runs its services with six qualified hospital pharmacists and three hospital pharmacists in training. Therefore hospital places are limited and highly sought after.

The role of pharmacists in the Netherlands appears to be more office-based than that of their UK counterparts, involving research and project work rather than the day-to-day management of the department. A duty pharmacist deals with clinical problems for the day, including checking prescription interactions reports that are generated by the computer system. Since pharmacists and their assistants do not currently perform ward-based clinical services, pharmacists do not often see patients' notes or talk with patients. Therefore, despite the pharmacists' assistants competence and the computer system's function to flag interactions, double medication and non-standard dosing, some problems can leave the pharmacy undetected. In particular, medicines that, although correctly written up and not causing interactions, are still inappropriate for the patient. This is because pharmacists have limited access to information in order to make judgements about

individual patients. One of the exchange's aims is for Dutch practitioners to gain confidence in undertaking unaccompanied clinical visits and develop clinical pharmacy skills as independent practitioners.

Production facilities

Most Dutch hospitals have a production facility. These only manufacture for their own hospital and are large compared with standard UK aseptic facilities.

For many years UK aseptic facilities have used Good Manufacturing Practice (GMP) guidelines. This, however, was not totally implemented in the hospital I saw and systems were being altered to comply with the guidelines. In contrast, all the production facilities in the Netherlands have to fully comply with the EU GMP rules within three years. GMP demanded the introduction of new policies, such as the tracking of products through the unit, operator revalidation and alterations to the physical design of the rooms themselves.

Quality control

The Dutch use in-house quality control. Incoming raw materials are quarantined and tested to ensure that they meet standards for use. This can involve pH testing, ultraviolet or infrared spectrometry or container analysis. Following a successful check, raw materials are released to the production unit. At the same time, the production protocols for the product are electronically unlocked. The computers in the facility require this to allow materials to be measured and lines programmed. This process prevents untested materials and protocols being used.

At the end of production the same laboratory performs analysis — pyrogen and sterility tests — on the products before they are certified for release. Although pharmacists are responsible for the final product, unless a problem occurs, they only see production paperwork confirming that the tests were acceptable. Pharmacists' assistants take responsibility for the intermediate stages of production.

Therapeutic drug monitoring

Therapeutic drug monitoring is undertaken by pharmacy departments in the Netherlands. A dedicated laboratory performs a range of analysis on patients' bloods. Using processes such as mass spectrometry and chromatography, serum drug or metabolite levels can be determined. This can be used by the laboratory pharmacist to predict future drug concentrations within the blood and allow him or her to recommend a treatment path. The processes can also be used when required to identify a drug cocktail in a case of overdose.

Future developments

The Dutch have not yet defined clinical governance in the way the UK has, but are clearly developing in the ways that clinical governance demands. Adopting GMP meets a component of clinical governance by allowing them to trace accountability and identify areas where performance can be improved.

In Zwolle, for example, there were no formal error monitoring procedures and only a voluntary system of reporting mistakes or near misses on the wards or adverse drug effects until recently. Reports are, however, monitored by a committee which communicates with the relevant department to implement change. The pharmacy, in conjunction with clinicians, has used North American data to identify and target points in the supply process where the greatest errors occur. It is hoped that barcode tagging of patients to their drugs will reduce administration errors. Robotic dispensing will be piloted shortly. Studies carried out by the pharmacy department have shown that once implemented, these changes could reduce the chance of errors by up to 50 per cent. This is an example of the way the Netherlands is undertaking risk management.

The pharmacy is aware that clinical interventions are limited at present and that implementation of UK-style ward pharmacy is prevented by the low number of pharmacists. Central to addressing this issue is the introduction of satellite dispensaries. Since a pharmacist does not need to be present at all times to make decisions the large

number of pharmacist's assistants can be distributed to allow one of these dispensaries on most wards, with pharmacists contactable when necessary. Satellites will enable:

- ▶ Local stock control and monitoring of prescriptions with opportunities to correct issues immediately
- ▶ A clean environment for intravenous solution additions, removing the need for extensive logistics
- ▶ Dispensing of individual patients' items to be transferred from the main pharmacy to enable robots to perform the routine bulk item dispensing, for example ward stock packs
- ▶ The removal of the "boomerang effect" — wasting time as staff and prescriptions shuttle backward and forwards to the main pharmacy
- ▶ Pharmacists' assistants to be present on the ward, talking to practitioners and patients, reading clinical notes and passing this information to pharmacists
- ▶ The profile of pharmacy to be raised

In conclusion

I believe that the placement was an excellent opportunity and a valuable component of my preregistration year. It allowed me to appreciate areas with which pharmacists in the UK have little involvement and to observe the different ways that services can be delivered. I believe that qualified pharmacists and technicians could also benefit from similar experiences. With an expanded EU there is an even greater number of opportunities available. What was clear to me is that both countries have the same priorities and are progressing in the same direction. Co-operation and a consistent approach across borders can only enhance services to patients and those who work with them.

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