Factors influencing effective independent nurse prescribing

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**Aim** To identify some of the factors influencing effective independent nurse prescribing within a surgical high-dependency unit.

**Method** An audit methodology was used to record the personal prescribing practice of a critical care nurse following the completion of a course in independent and supplementary prescribing.

**Results** The main factors influencing effective independent nurse prescribing were identified as limitations of the *Nurse Prescribers’ Formulary*; lack of depth and breadth of experience in clinical and diagnostic reasoning; insufficient opportunities to enable reflection in practice and case-based learning; and variation in prescribing practice among individual clinicians.

**Conclusion** In the acute setting, the limitations imposed by the *Nurse Prescribers’ Formulary* reduced the number of medicines that would otherwise have been prescribed, amended or discontinued. The recommendation from the Committee on Safety of Medicines that suitably qualified and trained nurses should be able to prescribe any medicine from the *BNF* is therefore wholly welcomed.

Following the Review of Prescribing, Supply and Administration of Medicines and the introduction of non-medical prescribing (Department of Health, 1999), several studies have reported that nurses are still not prescribing after completing a nurse prescribing course (Larsen, 2004; While and Biggs, 2004). Factors perceived to influence effective independent nurse prescribing included lack of peer supervision, inadequate knowledge of pharmacology and the limited formulary.

In response to a joint Medicines and Healthcare products Regulatory Agency/DH consultation in 2005 to examine options for the future of independent nurse prescribing, the Committee on Safety of Medicines recommended that suitably trained and qualified nurses and pharmacists should be able to prescribe any licensed medicine for any medical condition, within their own competence. In May 2006, independent nurse prescribers became able to prescribe from the entire *BNF*, with the exception of controlled drugs. This should overcome the prescribing difficulties associated with the restricted formulary (Lewis-Evans and Jester, 2004). This paper describes some of the factors influencing effective independent nurse prescribing in an acute clinical setting, drawing upon my prescribing experience in my present role as a critical care nurse consultant.

**Aim**

An audit methodology was employed to evaluate prescribing practice during the first three months after registration as an independent and supplementary prescriber. The main aim was to explore the scope of prescribing practice in an acute environment and to identify and overcome factors that inhibited effective independent nurse prescribing. Supplementary prescribing was not undertaken, mainly because of the complexities involved in drawing up clinical management plans for acutely/critically ill patients and the expected introduction of renewed legislation enabling nurses to prescribe all drugs from the *BNF*.

**Background**

**Clinical setting**

Clinical practice was undertaken within a four-bed surgical high-dependency unit (SHDU) in a large teaching hospital, where I worked each morning. The unit admitted patients following discharge from intensive care and those requiring post-operative care after major colorectal, gastric, vascular and pancreatic surgery. The majority were designated ‘level 2’ – requiring more detailed observation or intervention, including support for single organ system, post-operative care and those stepping down from higher levels of care (DH, 2000). A clinical director (consultant surgeon) was responsible for the medical leadership of the SHDU and provided guidance on my role development within the unit.

There were several perceived benefits to patients of introducing independent nurse prescribing within the SHDU. First, critically ill patients were at risk of a sudden, acute clinical event and it could be some time before a doctor – who was not resident on the unit – could review them and prescribe treatment. Second, the SHDU was in a different building from...
the ICU, which could cause a delay in timely intervention and treatment, particularly in a clinical emergency. Third, patients admitted to the unit remained under the care of a consultant surgeon and in the event of a clinical problem the first point of contact could either be a pre-registration or senior house officer who might not have the necessary expertise to deal with acute clinical situations.

Developing prescribing practice
Upon registration, my independent prescribing practice in the SHDU was supervised by a consultant surgeon who provided guidance and mentorship. As the unit is surgically led, patients remained under the care of one of several consultant surgeons, each advocating an individual approach to care and management, including the prescription of medications and intravenous fluid therapy. In the absence of clear protocols to standardise and guide practice, clinical reasoning skills and knowledge of evidence-based practice were considered essential to make decisions about diagnosis and treatment.

As Szaflarski (2000) pointed out, the consequences of inaccurate and inconsistent clinical reasoning have serious ramifications for clinical outcomes – errors in clinical reasoning can occur at any point in the process resulting in failure to begin treatment, institution of inappropriate treatment and/or late treatment. Prescribers therefore need to consider the patient’s medical history, the nature and cause of the presenting complaint, and the complexities and consequences of surgery. In addition, factors relating directly to medicines need to be considered, such as pharmacokinetics, contraindications, interactions, allergy status and research evidence, not to mention an individual consultant’s treatment protocols.

Design and data analysis
Method
Qualitative data was collected using a diary for just over three months, enabling reflection and documentation of significant events considered to influence prescribing practice. The following information was recorded:

- Type of medication prescribed;
- Problems encountered;
- Rationale for prescribing the medicine;
- Frequency of prescribing;
- Feedback from medical colleagues regarding treatment decisions.

The data analysis is essentially a description of the type of medicines prescribed and discussion of the factors influencing independent prescribing.

Findings
Out of a possible 49 working days, 22 clinical sessions were worked on 22 days. Clinical work was undertaken in the morning in order to coordinate the

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Verbal orders could not be dealt with appropriately as, again, I had to consult the BNF to ensure that I could prescribe the medicine before it could be given. This could cause significant delays in treatment decisions/prescriptions – particularly if a doctor was in theatre or clinic. Owing to these issues, my practice was mainly limited to prescribing medicines in emergency situations. Being able to prescribe all medicines in the BNF should hopefully resolve these practical problems.

Clinical reasoning and diagnostic skills

Perhaps one of the major challenges in becoming an independent nurse prescriber is the acquisition of effective clinical reasoning and diagnostic skills. According to Szafarski (2000) ‘clinical reasoning is a complex thinking process that is used to acquire and evaluate data and make decisions about the diagnosis and treatment of patient problems’. Doctors are not trained in the same way as nurses in that they develop their sound clinical and diagnostic skills by serving a lengthy apprenticeship, observing and working alongside clinical experts.

Essential skills such as taking a comprehensive health history, performing a clinical examination, requesting investigations, interpreting results and clinical data, and diagnosis of disease are mastered during medical training. Sound treatment decisions, the ultimate goal of clinical and diagnostic reasoning, is dependent upon the depth and breadth of an individual’s knowledge and experience of treatments and medications, including their side-effects, efficacy, indications and contraindications, complications and mechanism of action.

As a novice prescriber, clinical reasoning was affected by several factors, which in turn influenced my prescribing practice, particularly when faced with a previously undiagnosed clinical problem.

First, in the high-dependency setting where patients were acutely ill and often physiologically unstable, a thorough clinical assessment was not always possible and this could influence treatment decisions. For example, a patient may have had an altered level of consciousness, influencing the quality of history taking.

Second, patients who were deteriorating rapidly often required prompt diagnosis and treatment, relying upon clinical information in order to assist with diagnosis – such as medical case notes or blood results – which were often incomplete or were unavailable.

Third, patients often had several diseases or conditions requiring extensive knowledge of side-effects, complications, contraindications and interaction between treatments. Considering all of these issues, competent clinical and diagnostic reasoning skills would appear to be essential prerequisites for effective and safe prescribing of medicines. Indeed, the British Medical Association (2005) expressed its concerns that nurses and allied health professionals do not have the necessary assessment and diagnostic skills to diagnose and manage disease, calling the legislation ‘an irresponsible and dangerous move’ and saying that

<table>
<thead>
<tr>
<th>Medicine prescribed (n=number of times medicine prescribed)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furosemide 20 mg IV stat dose (n=1)</td>
<td>Patient presented with ‘fluid overload’. I discussed my decision beforehand with a consultant surgeon.</td>
</tr>
<tr>
<td>Discontinued a prescription for diazepam (n=1)</td>
<td>Patient was not receiving his prescribed diazepam so I made the decision to discontinue it. The parent team agreed with the decision.</td>
</tr>
<tr>
<td>Diclofenac 50mg three times daily (n=1)</td>
<td>The patient was reviewed by the pain team and required analgesia. It was later discussed with a consultant surgeon who agreed with the prescription.</td>
</tr>
<tr>
<td>Naloxone 100–200 micrograms as required (n=1)</td>
<td>Patient had no prescription and was receiving PCA morphine IV.</td>
</tr>
<tr>
<td>Volplex 250ml bolus over 30 minutes (n=1)</td>
<td>Patient had an epidural in situ and became hypotensive, requiring a fluid bolus.</td>
</tr>
<tr>
<td>Gelofusine 250ml bolus over 30 minutes (n=7)</td>
<td>Prescribed for acute hypotensive events that required a fluid bolus.</td>
</tr>
<tr>
<td>Actrapid insulin continuous IV infusion (n=1)</td>
<td>Incorrect prescription, which I amended.</td>
</tr>
</tbody>
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The British Medical Association (2005) *Newswire* article: ‘BMA calls for urgent meeting with Patricia Hewitt on plans to extend prescribing powers’ (Thursday 10 November 2005).

‘patients will suffer’. While this view has been vehemently opposed in the nursing press and would appear to be extreme, nurses who are advancing their clinical roles to prescribe medicines, regardless of the clinical setting, must be adequately prepared to undertake competent clinical and diagnostic reasoning in order to assume authority and accountability to diagnose and treat clinical conditions and diseases.

**Clinical supervision**

Although my prescribing practice was supervised overall by a consultant surgeon, constant exposure to clinical events under the direction and tutorship of an experienced clinician is crucial in order to develop expert clinical and diagnostic reasoning skills.

This might present problems for nurses working in acute settings, particularly if they are not directly accountable to, or work within, a designated medical team. In the SHDU, for example, there is no ward round as such – individual consultants visit their patients as necessary and there is no one delegated on a daily basis to oversee the running of the unit. This presented practical problems on obtaining timely and appropriate feedback on my treatment decisions and did not always allow for discussion of difficult cases that would help develop expertise and knowledge.

Explicit knowledge – that can be described, analysed and measured – can be gained to some extent from formal education undertaken on the prescribing course, which provides nurses and other practitioners with the fundamental principles for safe and effective prescribing practice. However, tacit knowledge, sometimes referred to as intuition (Benner and Tanner, 1987), is mainly gained by observing and working closely with clinical experts and allows the novice clinician to unknowingly use and build upon this knowledge (Szafiarski, 2000).

The acquisition of explicit and tacit knowledge is essential for competent clinical reasoning. Mastering this kind of knowledge comes with time, multiple case exposure, and actively listening to clinical experts, and it can only be maintained through constant practice and the infusion of scientific knowledge (Szafiarski, 2000).

Other factors, such as knowledge of evidence-based medicine and the balance of risks and benefits from a potential treatment, require careful consideration and, again, novice nurse prescribers will need to learn from clinical experts if they are to develop safe and effective practice. From my experience to date, developing clinical reasoning skills in the presence of clinical experts will continue to be a major challenge because of the way in which patients are medically managed on the SHDU. In addition, competing responsibilities of the nurse consultant role often inhibit regular clinical practice, limiting exposure to complex clinical situations and their management.

**Variation in practice**

Variation in prescribing practice among the different clinical teams had a significant influence on my own prescribing practice. For example, treatment options proposed by surgeons might have differed from those proposed by anaesthetists. This could lead to indecision when considering the conflicting wishes of individual clinicians. As my clinical and diagnostic reasoning skills are not sufficiently developed, my practice then tended to be guided by advice and instructions from individual clinicians in much the same way that a junior doctor’s prescribing practice is supervised, particularly when dealing with instructions from individual surgeons. The use of local treatment protocols, national guidance and evidence-based medicine might assist with clinical reasoning when faced with conflicting advice and difficult decisions regarding the efficacy of medicines, interactions and potential adverse effects.

**Conclusion**

In the acute setting the limitations imposed by the *Nurse Prescribers’ Formulary* reduced the number of medicines that would otherwise have been prescribed, amended or discontinued. The recommendation from the Committee on Safety of Medicines that suitably qualified and trained nurses should be able to prescribe any medicine from the *BNF* is therefore to be welcomed. For the most part, independent prescribing was limited to treating clinical symptoms, such as pain or hypotension, rather than the treatment of individual diseases. Nonetheless, due to the way that care delivery was organised on the SHDU, independent nurse prescribing enabled timely and effective treatment, particularly in emergency situations when a doctor was unavailable.

While the medical profession has been highly critical of the revised legislation, for experienced and suitably qualified nurses working in acute settings, independent prescribing will enable them to complement and supplement clinical skills within multidisciplinary teams to improve services for patients. That is not to say that nurses should emulate the medical model, but the depth and breadth of clinical experience that underpins effective clinical reasoning should not be underestimated if nurses want to assume authority and autonomy to prescribe medicines independently. The challenge will be for nurses to develop sound clinical reasoning and diagnostic skills under the guidance of experienced clinicians in order to prescribe medicines safely and effectively for a wide variety of clinical conditions and diseases.
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