Delivering intravenous therapy in the community setting


Summary
This article provides an overview of how an intravenous (IV) therapy service was developed in one primary care trust in England, the challenges that were faced and how they were overcome. The article includes some recommendations for others considering setting up a community IV therapy team.

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THE PRACTICE of administering intravenous (IV) antimicrobial therapy in the home has grown rapidly since it was first described in 1974 by Rucker and Harrison. Kayley (2003a) stated that there is: ‘an increasing demand for acute hospital beds, lengthening waiting lists and pressure from patients; it is therefore a natural development for some IV therapies to take place outside the hospital inpatient setting’.

Acute nursing and medical treatment provision in the home is viewed as an alternative to hospitalisation (Grayson et al 1995). The development of IV therapy from a medical to a nursing responsibility began during the second world war (Scales 1997). The role has further expanded as a result of increased knowledge and advances in technology. Because of the widespread use of IV therapy in a variety of healthcare settings, patients are no longer constrained within a specific care environment. This is further highlighted in the white paper Our Health, Our Care, Our Say (Department of Health (DH) 2006), with its intentions to give control to those who use the service in a community setting.

Service delivery
The delivery of IV therapy in the community began in the UK during the 1980s, primarily as a service for children with cystic fibrosis (Catchpole 1989, Ellis 1989). Many primary care trusts (PCTs) in the north west of England now offer a range of community IV services. Medical problems currently treated include cellulitis, bronchiectasis, urinary tract infections and bone and joint infections. However, there is no overarching NHS strategy for IV therapy in the community and no standard for service provision.

In recent years NHS reforms have changed the focus of care delivery and placed the patient at the centre of care. This gives patients a choice of where they would like to receive their care and from whom (DH 2006).

Halton and St Helens NHS PCT have developed multiple hospital admission avoidance schemes, including an IV therapy service. As a result, an IV co-ordinator was appointed by the PCT to implement a community IV service. This embraced the approach outlined by Depledge and Gracie (2006) who state:

- A key co-ordinator is pivotal to the success of an IV team as he or she acts as liaison between the hospital and homecare team.
- The co-ordinator is responsible for accepting referrals, designing documentation appropriate for the needs of staff and patients, audit, research, teaching and training skills.
- The presence of like-minded staff encourages communication and improves networking so that policies and procedures can be shared.

Depledge and Gracie’s (2006) anecdotal evidence suggests that where specialist infusion staff are employed, organisations have benefited greatly.

The Halton and St Helens NHS PCT IV team comprises three nurses appointed over a two-year period as demand for the service increased. The broad aims of the service are as follows:
Avoidance of hospital admission.

Early discharge from hospital.

Provision of community-based IV clinics.

For the service to recruit patients it was important to identify and target stakeholders. As key stakeholders, GPs were informed of the service in a variety of ways, for example, IV nurse attendance at GP education forums, learning events and individual GP practice meetings. Some GPs did not feel competent or capable of prescribing IV medication, some felt that if patients were that ill they should be in hospital, while others stated that they were not able to cannulate patients. Some PCTs in north west England decided to use a GP with special interest or GP facilitator. While maintaining their role in general practice, they assume clinical responsibility for patients in the community requiring IV therapy. The GP with special interest or GP facilitator prescribes the medication and works collaboratively with the IV therapy nurses to monitor the care given to patients at home. This may help to alleviate some of the concerns for GPs.

The obvious benefits of early discharge are felt most by patients who can return to full-time employment and those who can resume their usual activities of daily family life, while receiving treatment. Enhanced patient satisfaction and quality of life have been demonstrated by the IV service by auditing patient satisfaction surveys post-treatment. Tice _et al_ (2004) state that: ‘For most programmes, soft tissue and bone infections are the most common diagnoses.’ Orthopaedic surgeons use the community IV therapy service regularly and their patients form a sizeable portion of the total referrals (Figure 1).

In some cases, it might be appropriate to consider self or caregiver administration. This may alleviate some of the difficulties patients experience with disruption to their personal lives, especially with medication regimens that require administration four times daily. This may be considered viable for patients with a central venous access device (CVAD), requiring long-term IV therapy. It is important to note that a robust training and education package must be in place (Royal College of Nursing 2005) that enables patients and carers to administer the therapy safely and effectively.

A more contentious area is the reluctance of some microbiologists to prescribe one of the more common once daily antimicrobials because of concern that this may cause mass community resistance. However, Tice _et al_ (2004) state that one of the main reasons for the growth of community-based IV therapy programmes, as well as the technological advances in vascular access and infusion devices, is the development of antimicrobial agents that can be administered once daily.

Traditional four times daily IV penicillin medication costs approximately £178 per day in comparison with £51.17 per day for a third generation cephalosporin (British National Formulary 2007) excluding ancillaries, but including nursing time. Third generation cephalosporins are given once daily due to their long half life (the half life of a drug is the time taken for the plasma concentration of the drug to reduce by half) (Courtenay and Griffiths 2004). Daily regimens show a cost saving to the PCT because of fewer visits and the reduced nursing input that is required. Patients often favour cephalosporins because they are less restrictive.

Anecdotal evidence has resulted in an increase in IV therapy home visits due to a reluctance to recommend once daily medication. This may be manageable in the day time, but causes problems for twilight and night staff because of reduced numbers of staff covering large geographical areas. An added pressure for the PCT is providing patient care under pre-existing service level agreements with neighbouring PCTs.

The composition of regional community IV therapy teams varies as follows:

- IV therapy nurses.
- IV therapy nurses and community/district nursing teams.
- IV therapy nurses, community/district nursing teams and private healthcare companies (Table 1).

The governance and risk management framework of private companies is an invaluable resource for the PCT.

**Community-based IV therapy clinics**

The range of applications for IV therapy in the community has expanded. The PCT is
administering antimicrobial therapy to a wider population and the range of therapies, for example, iron sucrose, bisphosphonates and immunoglobulins, has also increased. In the local population there are patients with chronic kidney disease who require courses of iron sucrose for iron deficiency anaemia throughout the illness. Over a 12-month period, there are approximately 285 patient episodes of care whereby patients attend a specialist hospital. This may mean a 30-mile round trip for a ten-minute bolus injection. The IV therapy service identified that the medication could be given safely at two local walk-in clinics and, in conjunction with colleagues from other local PCTs, now offer this service to patients regionally. For patients unable to attend the clinic, it is possible to consider treatment in the home.

Funding and resources

‘Funding is often a major stumbling block in the development of community IV therapy services’ (Kayley 2003b). In Halton and St Helens NHS PCT, patients who are referred from the acute trust are discharged home with the entire course of medication, diluents and flushes at no cost to the patient. This PCT’s community IV therapy team has found that patients referred via GPs are given an FP10, which incurs a possible cost of £6.85 per item prescribed, and has resulted in some patients choosing to be admitted to the acute trust to avoid payment. GPs with limited medication budgets may feel under pressure to admit patients to acute trusts rather than be charged for the medication. Community pharmacies in Halton and St Helens NHS PCT do not currently carry a stock of IV antibiotics. Therefore, when FP10s are issued, there can be a delay of up to 24 hours for the medication to be dispensed to the patient. For patients with more acute conditions this delay is not satisfactory, often resulting in GPs making a direct referral to the acute trust.

The community IV therapy team is considering the following options:

- Identifying designated community pharmacies prepared to stock IV drugs, with any losses in terms of out-of-date medication being met by the PCT. This would still incur a cost to the patient.
- The IV team to carry a stock of regularly prescribed medication that can be dispensed directly to the patient in accordance with the prescription. The patient would not incur any costs.
- Consider using a commercial healthcare company to provide a comprehensive service, excluding nursing personnel, which would include all medication, diluents and consumables delivered direct to the patient’s home. However, this may be costly for the PCT.

It is important to note that, regardless of the option chosen, funding should be allowed to follow patients, ensuring that they are not penalised because of where they are referred from.

Training and development

This is a demanding part of the IV therapy community team’s role and is time-consuming. An IV therapy service that uses community nurses as its workforce must provide a comprehensive training and education package, ensuring all treatment is delivered safely and effectively. Historically, community nurses had

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<td>Composition of regional community intravenous (IV) therapy teams</td>
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<td>Local community IV therapy team</td>
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to refer to acute trusts for training in CVADs and any other aspect of IV therapy.

Scales (1996) points out that the emerging role of the nurse in IV therapy, while providing professional satisfaction, has increased risk and liability. Nurses should have a clear understanding of the legal and professional aspects of IV therapy to maintain their professional integrity. In the Halton and St Helens NHS PCT IV service, a series of study days is available to community nurses, neighbouring PCTs and nursing home staff. All nurses required to deliver the service are expected to attend. The training programme was devised around the collaborative IV nursing service’s guidelines and workbook (Collaborative Intravenous Nursing Service (CINS) 2007) (Table 2).

It is also necessary to assess competencies and provide training in practice. All nurses need to be assessed as competent and signed off by either an IV nurse specialist/practitioner or a delegated suitably trained person, for example, a district nurse team leader. The Nursing and Midwifery Council’s (NMC) Code of Professional Conduct (NMC 2004) places clear responsibility on the individual registrant to maintain his or her competencies.

IV medication may need to be given via an infusion device. The use of infusion devices is common in community and acute settings, and technological advances – while making equipment more safe and reliable – have also made it more complex and difficult. The Medicines and Healthcare products Regulatory Agency (MHRA) identified that one of the most serious types of medication error involves the use of infusion pumps. Furthermore, the MHRA suggests that many errors arise because of lack of training (Quinn 2000).

To try to minimise the risk of infusion device errors in the service only one type of pump was bought and, with the help of the company who manufacture the pumps, six-monthly training sessions for the community nurses are offered. Two working days with seven, one-hour drop-in sessions are provided and are held in each of the boroughs covered by the PCT. Because the sessions are held in this format it enables community nurses to attend between their planned patient visits to update their knowledge.

Many trusts have an erratic system for purchasing, storing and maintaining equipment, and for training staff (Whyte 2001). The IV service has tried to address these and other issues by the identification of a link nurse from each community nursing team. The link nurses have produced a comprehensive list of essential standardised equipment and consumables to be used in accordance with policies, guidelines and procedures. The link nurses also meet monthly and are able to disseminate new and relevant information to colleagues.

When considering the setting up of an IV community service it is important to decide whether the service is to be restricted to offering administration via CVADs or whether peripheral IV access will be included. This will have further implications for referrals, training and skills acquisition.

The IV service accepts referrals for patients with central and peripheral catheters in situ. This previously had an effect on the service in terms of the number of staff available to undertake peripheral IV cannulation at any given time. When a member of the IV team was available, recannulation was not an issue. However, out of hours and at weekends, there was a disruption to the service if a peripheral IV cannula needed to be resited. It was necessary for patients to attend their referring ward, the accident and emergency department or a walk-in centre for recannulation.

A peripheral IV cannulation training package is now available and community nurses are encouraged to participate. After completing the theoretical component they are required to attend the local acute trusts with a member of the IV team, where they can be taught the practical aspects of peripheral IV cannulation. Competency assessments are then undertaken by the IV therapy nurses. It is important to ensure that community nurses are clear about the role they are undertaking in the acute trust when attending for practical cannulation experience. A letter is provided stating that the PCT maintains vicarious liability for those undertaking practical cannulation training only.

| TABLE 2 |
| Example of a study day |
| Study day | Programme content |
| An introduction to intravenous (IV) therapy | Anatomy and physiology. Legal and professional issues. Infection control. Pharmacology and calculations. Care and maintenance of central venous access devices (CVADs). Preparation and administration of IV medication. Anaphylaxis training is given as part of basic life support training in the primary care trust’s mandatory training programme. |
| IV therapy update | Theoretical sessions where nurses are formally assessed in the morning on their knowledge and in the afternoon have practical sessions on care and maintenance of CVADs, IV dressing application, troubleshooting and an open forum for any queries. |

NURSING STANDARD
Guidelines, policies and procedures

All guidelines, policies and procedures need to be robust, clear, functional, evidence-based and suitable for home care. Clinical guidelines, policies and procedures are crucial because staff may frequently be isolated in practice in someone’s home.

Community staff were expected to follow a large array of clinical guidelines and procedures. Each referring acute trust appeared to have its own clinical guidelines for its patients. Representatives were sought from each acute trust and PCT in the Cheshire and Merseyside region. National guidelines, including the Standards for Infusion Therapy (RCN 2005), Winning Ways (DH 2003) and Saving Lives (DH 2005) were used to compile the guidelines. The completed clinical guidelines have since been regionally adopted and rolled out across all PCTs and acute trusts. This has standardised the care that patients should expect to receive either at home or in hospital using the best available evidence. This has been successful and is to be consolidated using workbooks, training programmes, competency frameworks and an e-learning package.

Recommendations

There are a number of key recommendations for those who wish to set up a similar community IV therapy service:

- IV nurses working in collaboration with the community district nursing teams allow a more flexible service in terms of 24-hour care provision.
- Conduct a scoping exercise to identify the local need, key issues, staff and organisations that will be involved in the service’s planning, implementation and development.
- The appointment of a GP facilitator from the outset enhances the relationship with the locality’s GPs and acute trusts’ consultants, and encourages direct referrals.
- Education, training, development of policies, clinical guidelines and undertaking competency assessments are time consuming but vital aspects in the development of an IV therapy service.

Conclusion

There has been a significant shift in health care from the acute trust to the community setting. Practice-based commissioning and contestability will lead to new areas of care delivery and the reshaping of existing services to maximise opportunities and to improve patients’ lives while getting value for money (Depledge and Gracie 2006).

The role of the IV therapy nurse is innovative, challenging and professionally satisfying. It will provide community nurses with further proof of the vital roles that they fulfil, since the value of nursing care in this specialty should not be underestimated.

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