Home Infusion Therapy

The Savings Start at Home

Home infusion therapy is defined as the administration of medication through a needle or catheter. It is typically prescribed when a patient's condition cannot be treated effectively with oral medications. It began to gain popularity in the health care industry in the 1980's, partly due to escalating healthcare costs for both insurers and consumers. Healthcare providers determined that with appropriate oversight and management, injured workers could safely receive intravenous (IV) medications in the home environment, allowing for earlier hospital discharge. This not only achieves significant cost savings, but also allows the injured worker to return to as normal of a lifestyle as possible, while still receiving necessary medications.

This was a major change for both patients and the medical industry. No longer would a multi-week hospital stay be required in order to receive IV antibiotic therapy for the treatment of an infection when a significant portion of the treatment could be administered at home. As a result, home infusion therapy has increasingly become the preferred method of treatment for infections and many other conditions.

Compared to the costs of treatment at an inpatient facility, home infusion therapy may represent savings of up to 70%. Depending upon the complexity of the case, home care may cost $300 – $800 per day, whereas inpatient stay can range from $1,500 – $2,500 per day. The market spend of home infusion therapy through the end of 2012 was estimated at close to $16 billion.

Several components determine the costs for home infusion therapy, including: (1) Cost of the intravenous medication, based on type (brand or generic), strength and frequency; (2) Service fees for Registered Nurse (RN) visits to administer the IV medication; (3) Supplies such as vascular access devices, infusion pumps, IV tubing, catheters, dressings and cleansing agents; and, (4) Type of medication delivery process (i.e. peripheral intravenous line, central intravenous line or implanted pain pump). Proper management of these components can make a significant impact on medical spend as well as the quality of care.

Initiation of Home Infusion Therapy

The referral process for home infusion therapy often begins with the injured worker's discharge from the hospital or outpatient clinic setting. The treating physician selects the proper route of administration, which is based on the characteristics of the medication and administered via a vascular (peripheral) access device or central venous catheter (VAD or CVC).

The duration of therapy impacts the selection process as does the length of the infusion—continuous, daily, weekly, or monthly. The treating physician's prescription should clearly define the medication strength, frequency, duration of therapy (for antibiotics, it is usually six weeks), and length of IV administration, as well as any therapeutic drug monitoring and weekly labs that may be required.

Home infusion therapy must be performed under the supervision of registered nurses. Many times, the nurse has undergone additional training and received certification in home infusion therapy. He or she will have extensive knowledge and experience with all types of intravenous lines, including peripheral catheters and central lines. Typically, the nurse works in conjunction with a multidisciplinary team that may consist of case managers, pharmacists, social workers and home infusion delivery technicians. The complexity of the injured worker's condition, medical needs and infusion medications dictates the level of involvement by the various members of the team.

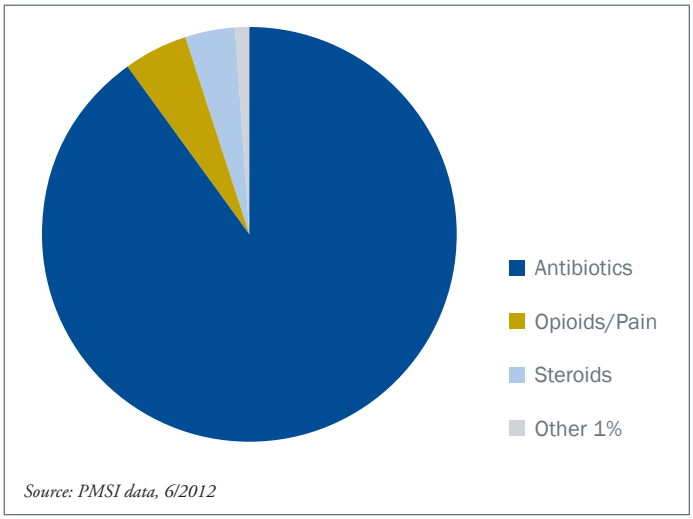
An essential role of the home infusion therapy nurse is to provide education to the injured worker and family members. Many patients with low risk or uncomplicated infusions may be successfully instructed to safely self-administer their IV medications. In these cases, the RN instructs the injured worker and/or their caregivers on how to flush lines, monitor for signs and symptoms of infection, and when to call the RN, physician or go to the emergency room. Although the RN will continue weekly visits for site care, self-administration can drive significant cost savings.

In addition, the RN may perform laboratory studies to monitor the efficacy of the medication or to verify resolution of the infectious process. The RN also serves as a liaison between the injured worker and the treating provider, communicating the progress of the injured worker's condition to the prescribing physician and obtaining updated orders and/or implementing changes to the home infusion treatment plan. Ultimately, the home infusion therapy nurse is charged with delivering safe, effective and appropriate infusion therapy in the home environment to the injured worker according to the treatment plan outlined by the providing physician.

Home Infusion Therapy Utilization Trends

In the workers' compensation industry, home infusion therapy is widely utilized. The predominance of this therapy is for the administration of antibiotics; however, the administration of analgesics, steroids and occasional anticoagulant therapy is also employed. This is supported by an analysis of PMSI's data from July 2011 through June 2012 (Figure 1). Our findings demonstrate that 90% of all utilization for home infusion therapy was for the administration of antibiotic therapy [in blue], while opioids [in gold] and steroids [in light blue] represented 5% and 4% of the utilization, respectively. The remaining 1% [in gray] included items such as anticoagulants, saline infusions, heparin flushes and epinephrine injections.

Figure 1: Home Infusion Drug Mix
(July 2011 – June 2012)



Source: PMSI data, 6/2012

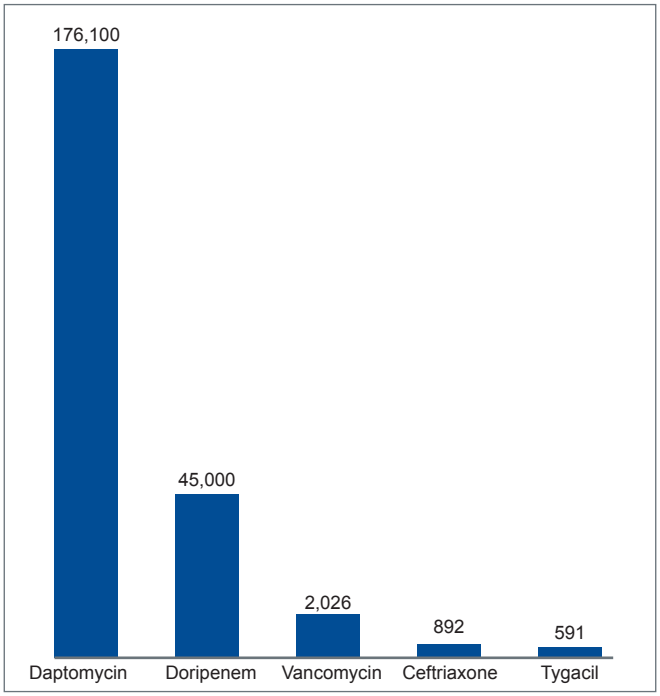
Antibiotic Therapy

Figure 2 illustrates the top five antibiotic agents provided through home infusion. This data reveals interesting trends with regard to antibiotic therapy administered via home infusion. Although more than 50 different agents were noted in the data set, daptomycin (Cubicin) was utilized most frequently, with 176,100 doses dispensed. Cubicin is typically administered for the treatment of skin and soft

tissue infections associated with methicillin resistant isolates, such as MRSA, a "super" infection found in both hospital and community settings. Although data from the Center for Disease Control (CDC) suggests that the frequency of MRSA infections is trending downward, this bacteria continues to be problematic. Our data suggests that many home infusion patients have a relatively high incidence of methicillin-resistant infections.

As noted earlier, Cubicin was dispensed at a rate of nearly four times that of the next most common antibiotic. While these methicillin-resistant isolates are found in communities around the globe, it is widely accepted within the medical community that they are more prevalent in inpatient facilities such as hospitals. Therefore, home infusion therapy is desirable as it removes the injured worker from a hospital setting, limiting the risk of exposure to harmful bacteria such as MRSA. Ongoing education in the community and among health care workers remains necessary to aid in combating the spread of MRSA and other infections.

Figure 2: Top 5 Home Infusion Antibiotics by Dosage
(July 2011 – June 2012)



Source: PMSI data, 6/2012

Pain Management Therapy

In the workers' compensation industry, the administration of opioids or other controlled substances via home infusion is fairly uncommon. As noted in Figure 1, only 5% of all medications dispensed for home infusion were used for the treatment of pain. Figure 3 outlines the top five pain medications delivered via home infusion.

> "Home infusion therapy removes the injured worker from a hospital setting, limiting the risk of exposure to harmful bacteria such as MRSA."

At times, due to the abuse of oral agents and/or the inability to attain manageable pain levels in chronic pain cases, physicians will recommend implantable intrathecal pain pumps for the treatment of pain. These devices have a pump and catheter that is surgically implanted under the skin around the abdominal area and deliver a controlled, specified small dose of an opioid medication (such as morphine sulfate) at set intervals into the intrathecal space near the spinal cord. This method targets medication delivery to the pain receptors in the area of the spinal cord, thus improving injured worker pain control and reducing the need for oral agents. These pumps are intended for use on a long term basis. Implantable pain pumps are typically managed and maintained by the prescribing physician in his or her office setting, which most commonly requires the injured worker to return to the office for the medication reservoir to be refilled. Although not a common practice, a nurse can visit a injured worker in the home to deliver a new cartridge of medication for a injured worker's pain pump. The billable charge would include the nurse's time and the cartridge of medication.

An additional type of pain delivery system that may be utilized in the home setting includes a PCA pump or a Patient Controlled Analgesia pump. These devices are more frequently prescribed on an inpatient basis for the short term treatment of post-operative pain; however, some conditions and diagnoses may allow for the PCA pump to be utilized by a injured worker at home (such as end stage

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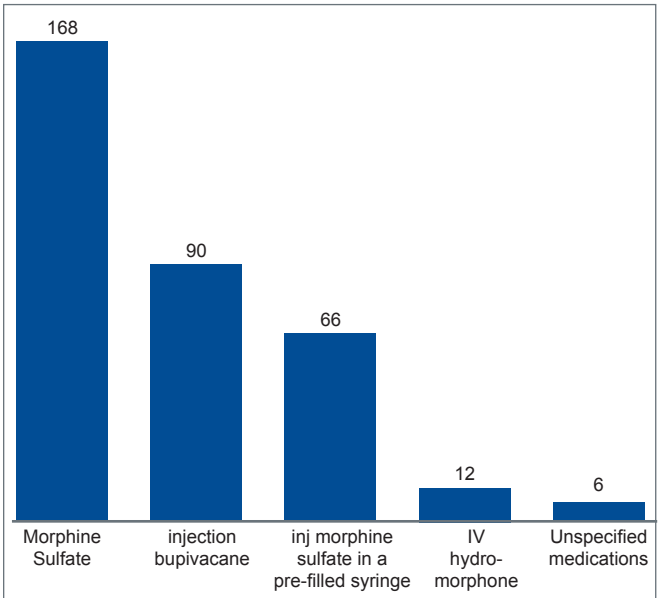
cancer). These particular types of pain pumps also deliver a controlled, specified small dose of an opioid medication at set intervals; however, the injured worker controls when a dose is administered. Additionally, the PCA is an external device that delivers the medication through a peripheral intravenous line or a central line and its use is intended to be on a temporary basis only. Use of a PCA pump is an atypical form of treatment in the workers' compensation industry, although its use cannot be ruled out for pain relief in the home environment.

Figure 3: Top 5 Home Infusion Opioids by Dosage
(July 2011 through June 2012)



Source: PMSI data, 6/2012

Conclusion

Home infusion therapy remains a widely utilized form of treatment within the worker's compensation industry, especially for antibiotic therapy. Because of its ability to limit the spreading of harmful bacteria such as MRSA and its ability to save costs, it is likely that the use of home infusion therapy will continue to increase. Home infusion therapy is a safe and effective alternative treatment with benefits to the injured worker and the healthcare system; in addition, it is providing positive patient outcomes, with reduced risk when compared to inpatient therapy . The healthcare industry is continuously changing and, as technology and treatment options advance, so will the opportunity for improved patient outcomes through home infusion therapy.

[1] National Home Infusion Association, www.nhia.org, accessed 11/2012

[2] Ibid

[3] McClinton, Denis H. (2009). The Right Dose, HomeCare, October 2009, accessed from http://homecaremag.com/mag/home-infusion-therapy-market-200910, 11/2012

[4] Ibid

[5] The Center for Disease Control, website http://www.cdc.gov/mrsa/statistics/index.html, accessed 11/2012

[6] National Home Infusion Association