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The focus of this second edition of The HITH Review is the management of deep vein thrombosis outside the hospital setting. This was selected due to the increasing number of publications on this topic in the literature. We also include commentaries of current publications on several other topical Hospital in the Home (HITH) or related areas.

The VCACI website is now active and includes a database listing articles specifically on HITH and Ambulatory Care. Free public access to Medline's publication and abstract listings is available from the National Institute of Health web site: www.ncbi.nlm.nih.gov/PubMed/.

Most of the articles listed in this review are available from libraries in Australia. Some full text articles are available from journal websites (eg. the British Medical Journal www.bmj.com/). The articles with an asterisk (★) are available from VCACI and can be requested, using the enclosed order form, if you are having difficulty obtaining a copy from your library. A charge of \$20 will apply for each article.

The purpose of The HITH Review is to update readers of developments in this area. We would appreciate receiving your feedback on The HITH Review and would welcome any contributions you may wish to share with other practitioners. The HITH Review is available free of charge from the VCACI. Please contact us if you wish to be included on our mailing list.

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Management of Venous Thromboembolism- home, outpatient or inpatient?

Lisa Demos
Christopher Fairley

commentary

The management of deep vein thrombosis (DVT) is one of the top six DRG's managed by Victorian HITH programs.

There is an increasing body of literature on the treatment of venous thromboembolism with low molecular weight heparins (LMWH) in the home or outpatient setting.

The articles summarised below conclude that:

- **Clinical outcomes, patient satisfaction and costs of therapy** for home or outpatient treatment with LMWH are **comparable to inpatient** management with unfractionated heparin.
- **LMWH is safe and effective** for the outpatient management of DVT in hemodynamically stable patients who do not require admission for coexisting conditions.
- **Monitoring and dosage adjustment** may be necessary for patients with obesity, renal failure or pregnancy.
- **Selection criteria** for patients that can be managed at home with LMWH **need ongoing review** to determine if the service can be extended to other patient groups.
- The most important factors for **successful** home treatment are **patient education** and an **efficient response** system with 24-hour medical backup.

Dunn, A. Outpatient treatment of deep vein thrombosis: Translating clinical trials into practice Am J Med 1999; 106: 660-9. ★

This paper provides a **review of clinical trials** of outpatient DVT treatment with subcutaneous LMWH. The trials comparing primarily home based LMWH treatment with inpatient intravenous standard heparin, have established the safety and efficacy of LMWH in selected patients. Appropriate patient selection is discussed, adequate patient education, daily follow-up during therapy with LMWH, and easy access to healthcare professionals. A structured multidisciplinary protocol for outpatient DVT treatment and a patient information form is provided.

Gould MK, Dembitzer AD, Sanders GD, Garber AM. Low-molecular-weight heparins compared with unfractionated heparin for treatment of acute deep vein thrombosis. A cost-effectiveness analysis. Ann Intern Med 1999; 130:789-99. ★

The authors evaluated cost-effectiveness from a US societal perspective. A decision model was used with probabilities for clinical outcomes from a meta-analysis of randomised trials and cost estimates from Medicare reimbursement and other sources. The evaluation used two hypothetical 60 year old male cohorts with acute DVT. LMWH was **shown to be cost-effective** for the inpatient management of DVT (\$7820 per Qaly gained) and could result in cost savings if 8% of patients were managed as outpatients.

Vanscoy, G. Outpatient management of venous thromboembolism. J Thrombosis Thrombolysis 1999; 7: 109-12. ★

This article summarises the literature on LMWH in the outpatient management of patients with DVT. These include several randomised multicenter trials that suggest that the use of subcutaneous LMWH in highly selected, uncomplicated venous thrombosis patients is as safe and effective as intravenous unfractionated heparin, and that most patients can be treated as outpatients or discharged early. A description of a cost saving pharmacy-managed DVT home treatment program and published trials that include patients presenting with recurrent venous thrombosis and pulmonary embolism are provided. The **data support treatment with LMWH and warfarin therapy in select venous thromboembolism outpatients** using a well planned program.

Spyropoulos AC. Outpatient protocols for treatment of venous thromboembolism using low-molecular-weight-heparin: to treat or not to treat at home. Editors correspondence. Arch Intern Med 1999; 159:1139-40. ★

This letter describes the author's experience with LMWH in the outpatient and short hospital stay management of patients with DVT. The **exclusion criteria** and the **expansion to selected patients** with upper extremity DVT and pulmonary embolus are discussed.

Bauld, D. Dalteparin in emergency patients to prevent admission prior to investigation for venous thromboembolism. Am J Emerg Med 1999; 17:11-5. ★

The authors of this 15-month prospective cohort study of 128 emergency department patients with suspected DVT or pulmonary embolism suggest that **treatment with LMWH pending outpatient investigation is safe and effective**. There are also **cost savings** by avoiding one day of hospital admission. The authors suggest a larger study is warranted to validate their findings.

Kujovich, J **Low-molecular-weight heparin: more indications for use.** *Hospital Practice (Off Ed)* 1999; 34: 67-8, 71-8, 83-4. ★

This article suggests that although initial studies of LMWH in the treatment of DVT excluded pregnant women, patients with acute pulmonary embolism or a known hypercoagulable disorder, these don't need to be contraindications, and outpatient treatment is possible, provided that proper **patient selection** and **follow-up** are implemented.

Pout, G; Wimperis, J; Dilks, G. **Nurse-led outpatient treatment of deep vein thrombosis.** *Nursing Standard* 1999; 13: 39-41. ★

Describes a DVT service co-ordinated by specialist anticoagulant nurses for the outpatient LMWH treatment of patients with DVT. A 6 month pilot of the service demonstrated that it was a **safe, effective** at reducing bed occupancy and it met with **patient's satisfaction**.

Rydberg EJ, Westfall JM, Nicholas RA. **Low-molecular weight heparin in preventing and treating DVT.** *Am Fam Phys* 1999; 59:1607-12. ★

Summarises the literature on the use of LMWH in the prophylaxis and treatment of DVT in the hospital and outpatient setting. An algorithm for the treatment of DVT is provided.

Yeager, B, Matheny, S. **Low-molecular-weight heparin in the outpatient treatment of DVT.** *Am Family Phys* 1999; 59:945-52. ★

Summarises the literature on LMWH in the treatment of uncomplicated DVT. Discusses the use of LMWH as an alternative to hospitalisation in **select patients with DVT** and the requirement for coordination of care, a multidisciplinary protocol, laboratory monitoring, patient education and participation in treatment and clinical trials to define appropriate indications for outpatient management.

Ferris R. **Treating deep-vein thrombosis in an outpatient setting using low molecular weight-heparin.** *Infusion* 1999; 5(8 suppl):3-4. ★

Ferris R, Holland JS. **Costs associated with DVT treatment in hospital settings: The experience of two managed care organisations.** *Infusion* 1999; 5(8 suppl):15-6. ★

Holland JS. **Deep-vein thrombosis: evaluating the treatment options.** *Infusion* 1999; 5(8 suppl):5-9. ★

Huggins S, Ferris R. **Treating DVT: A case study.** *Infusion* 1999; 5(8 suppl):17-22. ★

Lee R. **Low molecular-weight heparins in the outpatient settings.** *Infusion* 1999; 5(8 suppl):10-4. ★

The supplement in *Infusion* summarises the treatment of DVT in outpatient settings and provides a treatment protocol, costs and a case study.

Other relevant articles published in 1998

Bossuyt PMM *et al.* Out-of-hospital treatment of venous thrombosis: socioeconomic aspects and patients' quality of life. *Haemostasis* 1998; 28(suppl 3):100-7. ★

Buller HR. Outpatient therapy with low-molecular-weight heparins: new perspectives for treatment of deep vein thrombosis. *Haemostasis* 1998; 28(suppl 3):91-4. ★

Grau E *et al.* Home treatment of deep vein thrombosis: a two years experience of a single institution. *Haematologica* 1998; 83:438-41. ★

Groce JB III. Patient outcomes and cost analysis associated with an outpatient deep vein thrombosis treatment program. *Pharmacotherapy* 1998; 18:175S-80S. ★

Haas SK. Treatment of deep venous thrombosis and pulmonary embolism current recommendations. *Curr Concepts Thrombosis* 1998; 82:495-510. ★

Haines ST. Patient education: a tool in the outpatient management of deep vein thrombosis. *Pharmacotherapy* 1998; 18:158S-64S. ★

Harrison L *et al.* Assessment of out-patient treatment of deep-vein thrombosis with low-molecular-weight heparin. *Arch Intern Med* 1998; 158:2001-3. ★

Leong WA. Outpatient deep vein thrombosis treatment models. *Pharmacotherapy* 1998; 18:170S-74S. ★

O'Shaughnessy DF *et al.* Outpatient management of deep vein thrombosis. *J Acc Emerg Med* 1998; 15:292-3. ★

Prandoni P. Unfractionated heparin and low-molecular weight heparin for the initial treatment of acute venous thromboembolism. *Haemostasis* 1998; 28(suppl):85-90. ★

Roger M *et al.* Cost-effectiveness of low-molecular-weight heparin and unfractionated heparin in treatment of deep vein thrombosis. *Can Med Assoc J* 1998; 159:931-8. ★

Stockelberg D *et al.* Treatment of deep vein thrombosis with low molecular weight heparin at patient's home. *J Thrombosis Thrombolysis* 1998; 6:169-71. ★

Ting SBN. Dalteparin for deep venous thrombosis: a hospital-in-the-home program. *Med J Aust* 1998; 168:272-6. ★

Wells P et al. Expanding eligibility for outpatient treatment of venous thrombosis and pulmonary embolism with low molecular-weight heparin: a comparison of patient self-injection with homecare injection. *Arch Intern Med* 1998; 158:1809-12. ★

Van den Belt AGM, et al. Replacing inpatient care by outpatient care in the treatment of deep vein thrombosis-an economic evaluation. *Thrombosis Haemostasis* 1998; 79:259-63. ★

Veller M et al. Low-molecular weight heparins allow selected outpatient treatment for venous thrombosis. *Sth Afr Med J* 1998; 88:694-5. ★

Yurkowski P. Issues in developing an outpatient deep venous thrombosis treatment program: University hospital experience. *Pharmacotherapy* 1998; 18:165S-69S. ★

Febrile Neutropenia – Oral therapy but not as an outpatient

Christopher Fairley
Rachael Addicott

commentary

In this issue, we report a series of papers regarding the use of oral antibiotics (typically amoxicillin-clavulanic acid plus ciprofloxacin) for the treatment of patients with **low-risk** febrile neutropenia. Some studies were randomised trials (oral compared to intravenous therapy) and others were open label. In most trials, patients remained in hospital until the fever resolved.

Oral therapy was generally found to be equivalent to intravenous therapy in low risk patients. However, while there is now mounting evidence to support oral therapy in **carefully selected low risk patients**, the editorial in the recent edition of the New England Journal of Medicine (Finberg & Talcott, 1999) and some articles consider **there is inadequate information to recommend that this treatment be administered in the outpatient setting.** These issues are discussed well in the recent edition of the New England Journal of Medicine (volume 351, issue 5) and the last sentence of this editorial reads “*That we can, with confidence, identify and safely treat some of the patients with this condition on an outpatient basis is something we do not know*” (Finberg & Talcott, 1999).

The articles summarised below conclude that:

- Oral antibiotics in low risk patients with neutropenia are safe and effective
- Oral antibiotics have mainly been studied in hospitalised patients

Freifeld A, Marchigiani D, Walsh T, et al. **A double-blind comparison of empirical oral and intravenous antibiotic therapy for low-risk febrile patients with neutropenia during cancer chemotherapy.** *New Engl J Med* 1999; 341: 305-11. ★

Method: A randomised, double-blind placebo controlled trial comparing oral ciprofloxacin plus amoxicillin-clavulanate to intravenous ceftazidime in low-risk febrile neutropenic patients.

Results: Seventy one percent (n=116) of the oral treatment group and sixty seven percent (n=116) of the intravenous treatment group were treated successfully (p<0.05).

The mean duration of neutropenia was 3.4 and 3.8 days for the oral and intravenous groups respectively. The statistical significance of this result is not reported.

Oral treatment was less well tolerated with 16% of oral treatment courses failing because the patient could not tolerate the regimen compared to 1% of intravenous therapy.

Conclusion: For low-risk cancer inpatients experiencing fever and neutropenia, oral administration of empirical broad-spectrum antibiotics (ciprofloxacin plus amoxicillin-clavulanate) is as safe and effective as intravenous ceftazidime alone. The authors **recommended** that **studies** be conducted to assess the outcomes of **outpatient treatment** of fever and neutropenia with **oral antibiotics.**

Kern WV, Cometta A, de Bock R et al. **Oral versus intravenous empirical antimicrobial therapy for fever in patients with granulocytopenia who are receiving cancer chemotherapy.** *New Engl J Med* 1999; 341: 312-8. ★

Method: A prospective, randomised, multicentre, open-labelled trial to evaluate the effectiveness of oral ciprofloxacin plus amoxicillin-clavulanate and intravenous ceftriaxone plus amikacin for the management of patients with febrile neutropenia.

Results: Treatment was successful in 86% (n=161) of the oral treatment group and 84% (n=151) of the intravenous treatment group (p=0.02). Nineteen percent of episodes in the oral treatment group and 22% of episodes in the intravenous therapy group experienced changes in treatment (p=0.58).

Conclusion: Oral therapy with ciprofloxacin plus amoxicillin-clavulanate is as effective as intravenous therapy for the treatment of fever and granulocytopenia in low-risk cancer patients. The authors **recommend further study** in the **outpatient setting.**

Minotti V, Gentile G, Bucaneve G et al. **Domiciliary treatment of febrile episodes in cancer patients: a prospective randomised trial comparing oral versus parenteral empirical antibiotic treatment.** *Support Care Cancer* 1999; 7:134-9. ★

Method: 183 low-risk, febrile cancer patients in an outpatient setting (either neutropenic or non-neutropenic) were randomly assigned to receive either oral ciprofloxacin or intravenous ceftriaxone.

Results: Eighty-two percent (n=93) of the oral and 75% (n=90) of the intravenous episodes were regarded as successful. Similar success rates were recorded for the sub-groups, neutropenic or non-neutropenic.

Conclusion: Home treatment with either oral or intravenous antibiotic empiric monotherapy is effective for low-risk cancer patients with fever and/or neutropenia. The authors report that a number of factors impact on the choice of whether to use oral or intravenous treatment, however, as **oral therapy** has shown to **cost less** and be **easier to administer**, it would **appear** to be the **preferred method** of treatment.

Mullen CA, Petropoulos D, Roberts WM et al. **Economic and resource utilization analysis of outpatient management of fever and neutropenia in low-risk pediatric patients with cancer.** *J Pediatr Hematol Oncol* 1999; 21(3):211-8. ★

Method: A randomised trial of oral ciprofloxacin or intravenous ceftazidime in 73 outpatient low-risk cancer patients with febrile neutropenia.

Results: Eighty-six percent of episodes were managed without the need for hospitalisation. No patients in either group died during the trial. The median calculated cost of treatment was \$US1544 for the oral and \$US2039 for the intravenous groups (p<0.01). The median equivalent inpatient cost was estimated at \$US4503. Ninety-eight percent of families preferred outpatient care, typically due to increased quality of life for the patient and the family.

Conclusion: The **outpatient management** of febrile neutropenia in **low-risk** cancer patients is significantly **less expensive** than inpatient management and is **preferred** by the majority of **families**. However these families initially chose to be in the outpatient group.

Mullen CA, Petropoulos D, Roberts WM et al. **Outpatient treatment of fever and neutropenia for low risk pediatric cancer patients.** *Cancer* 1999; 86:126-34. ★

Method: A randomised trial of 73 low-risk pediatric episodes of fever and neutropenia treated in the outpatient setting with either oral ciprofloxacin or intravenous ceftazidime.

Results: Success was measured on the basis that the patient was not readmitted to hospital. Overall, eighty-six percent of episodes were successfully managed as outpatients, ninety-four percent of ceftazidime patients and eighty percent of ciprofloxacin patients. This difference was not statistically significant.

Twenty-three percent of episodes required modification to the initial antibiotic therapy regime. The average duration of neutropenia was 5.7 days.

Conclusion: With close initial medical assessment, **low-risk** paediatric patients with fever and neutropenia can be **safely managed** in the **outpatient** setting. The authors estimate low-risk episodes to be approximately one third of all episodes of fever and neutropenia. With an increased sample size, this issue can be trialed with greater confidence.

Critical Pathways in Hospital in the Home

Kaylene Fiddes

commentary

There has been substantial work, and experience gained, with critical pathways in the acute inpatient setting. However, critical pathways in the HITH setting, are primarily in their infancy. The following articles discuss critical pathways in the home care setting.

These articles do not provide useful information on actual pathway development and implementation and there are no new revelations, instead they reiterate the issues and benefits of pathways for hospital in the home, in particular outcome measurement.

All are US articles written within the context of the managed care environment. Setting aside references to managed care issues, discussions in these articles are applicable to all healthcare environments.

The key points which are potentially applicable to Australian HITH programs are summarised for each article.

Zander, K. **Where Will Clinical Paths Lead Home Care?** *The Remington Report* 1998; Sept/Oct: 7-8. ★

Zander reports that home health care has underutilised pathways and their ability to provide outcome data. She advocates that home health care formalise practice with outcome measurement through critical pathways, as in the acute inpatient setting.

Despite home health care's less "sophisticated" pathway work, Zander feels that critical pathways have impacted home health care because they:

- **highlight the skills, technology, patient and family education and monitoring utilised in hospital in the home**
- **describe practice patterns**
- **are proactive**
- **measure outcomes**
- **increase continuity**

This increase in continuity is valued because of the

potential fragmentation between visits, care providers and disciplines.

Zander feels the next step is to develop pathways, which incorporate the home care setting into the management of chronic conditions for wellness, prevention activities and patient education.

Behrendt, D. Home Care and Clinical Paths – Steps Toward More Effective Care. Health Care Innovation 1998; 8(1): p23-6. ★

The title of this article is misleading. The article focuses on the concept of **disease management** and a preventive approach to the care of patients with **chronic conditions** rather than critical pathways in a HITH type setting.

The article does discuss the value in **variance analysis**. It is suggested that for those pathways which follow patients from the inpatient setting into the home setting, there is a valuable opportunity for improving care right across the continuum.

MacNaughton, K. The Importance of Clinical Pathways to Home Care. Home HealthCare Consultant 1997; 4: 10-8. ★

This article emphasises the notable attention that pathways have received following reports of decreased costs and LOS without compromising quality or outcomes.

McNaughton suggests that home health care organisations have become increasingly involved in pathways, because of the increasing need for accountability in this component of care. The article claims the most important reason for clinical pathways in home care is the need for **outcome measurement**. The drive for outcome measurement in home health care is attributed to the payor system, accreditation requirements, the increase in consumer awareness and an increasing desire for benchmarking activities.

The article also provides the history of critical pathways, usual development **methodology**, and the **benefits** of pathways, especially that of **variance analysis**. McNaughton suggests that home care providers/organisations underestimate **time** and **resource** requirements for pathway development and implementation.

In the future integrated systems will see the further development of pathways, which incorporate all components of care within the one pathway.

Orientation & competency of home health care nurses

Carole Staley

commentary

These papers may be useful in guiding the development of orientation programs for nurses moving into acute home care.

The paper by Murray focuses on the overall orientation of nurses to the home health care setting and provides a literature review which details alternative approaches to orientation. Whereas, the paper by Rudzik focuses solely on the attainment of competency in relationship to tasks specific to infusion therapy and provides a useful checklist and evaluation form.

Murray, T. Role orientation in novice home healthcare nurses. J Nurses Staff Development 1998 14(6):287-92. ★

This article discusses role orientation, provides a literature review and presents the results of a cross-sectional survey of role orientation using the Role Orientation Scale and demographic characteristics of 75 new home health care nurses from 240 home healthcare agencies. Role orientation is defined as the manner in which one performs a role and adjusts to the role/task requirements.

The author claims that nurses employed in home health care for ≤ 24 months have only a moderate degree of understanding of their new role based on the survey results.

The article does not provide information on the Role Orientation Program, scale responses and the survey did not request information on the types of orientation therefore it is not possible to identify the most effective form of orientation. The author **recommends** that educators **critically evaluate** the effectiveness of **orientation programs** for novice home healthcare nurses and provides suggestions for improving orientation processes.

Rudzik, J. Establishing and maintaining competency. J of Intraven Nurs 1999 22(2):69-73

This paper describes the development of a **competency-based orientation program** for the intravenous nurse who is new to home care. Consideration is given to program design, program evaluation, and ongoing employee education. Sample employee and program assessment tools are provided.

The author suggests that outcome focused orientation is of benefit to both the new employee and the home care agency. A crucial factor to quality assurance and cost containment is the recruitment and maintenance of staff. A comprehensive orientation is good risk management and is essential for reducing liabilities and increasing employee satisfaction.

Antibiotics by IV push

Margaret McKenzie

commentary

The IV push method of administering antibiotics in the home setting has advantages over other methods of administration in that it is **simple**, **less expensive** requires **less equipment** and results in **increased mobility** for the patient. Concerns about the safety of giving medications via IV push have been raised and the following article compares complications with IV push to infusion.

Markel Poole S, Norwobilski A, Free F. **Intravenous Push Medications in the Home.** *J Intraven Nurs* 1999; 22: 209-15. ★

This study compares complication rates and patient satisfaction of intravenous antibiotics administered at home by infusion (minibag, elastometric devices, syringe pumps, large volume pumps and other devices such as CADD pumps) to IV push. The most frequently administered drugs in the study were ceftriaxone, cefazolin, and ceftazadime.

There were no significant differences found in the rates of complications and patient satisfaction was found to be high with all methods of administration.

This article

- provides information and experience on antibiotics administered by intravenous push, and
- concludes that the IV push method was safe and effective provided there were properly trained staff administering the drugs and educating the patients.

Bone Marrow Transplantation at Home

Margaret McKenzie

commentary

Advancements in the technology used to treat and support patients undergoing bone marrow or blood cell transplantation have led to an increase in survival, shorter hospital admissions and an increased use of home healthcare.

The following articles examine three important issues related to patients receiving part or all of their bone marrow transplant treatment at home.

The issues examined include:

- the **role** of the **homecare nurse**
- a **cost comparison** between inpatient and outpatient treatment
- **patient satisfaction.**

Kelley CK, Randolph S, **The Role of the Homecare Nurse Throughout the Continuum of Blood Cell Transplantation.** *J Intraven Nurs* 1998; 21: 361-66. ★

Cost cutting in the US has forced providers to transfer the preparation of these patients to the ambulatory setting thus providing opportunities for homecare nurses.

This article focuses on the role of the homecare nurse and provides a brief overview of the transplant process.

Meisenberg BR, Ferran K, Hollenbach K, Brehm T, Jollon J, Piro LD **Reduced charges and costs associated with outpatient autologous stem cell transplantation.** *Bone Marrow Transplantation* 1998 21, 927-32. ★

This US study analyses the financial costs of hospital and clinic administration of high dose chemotherapy and subsequent stem cell rescue in three different settings; inpatients, inpatients with outpatient follow up and as outpatients. The article concludes that treatment in **outpatient settings reduces the costs** of treating this group of patients with total costs for an inpatient treatment calculated at \$US74,417 and \$US48,874 for outpatients.

Herrmann RP, Leather M, Leather HL, Leen K. **Clinical Care for Patients Receiving Autologous Hematopoietic Stem Cell Transplantation in the Home Setting.** *Oncology Nursing Forum* 1998; 25: 1427-32. ★

This Australian pilot study details the treatment regimens, rates of complications, patient satisfaction and the implications for nursing practice, for patients receiving an autologous stem cell transplantation at home. The patients attend a day ward facility for the reinfusion of their stem cells but all other aspects of treatment including the chemotherapy administration are carried out at home.

Catheter Occlusions

Sue Daly

commentary

A range of vascular access devices are commonly used for parenteral drug administration. Catheter occlusion is the most common complication associated with central venous access devices and is generally related to clotting, drug precipitates or lipid residues. The following articles address various aspects of catheter occlusion.

Harris JL, Maguire D. **Developing a protocol to prevent and treat pediatric central venous catheter occlusions.** *J Intraven Nurs* 1999; 22:194-8. ★

This article describes a quality improvement initiative, which targeted catheter occlusion in pediatric patients. Data from the project facilitated development of a decision tree for the use of urokinase, hydrochloric acid, sodium bicarbonate and ethanol for central venous catheter obstruction.

Lenhart C. **Clinical critique new hope for managing occlusions of CVADs.** *Sectrum League Intraven Ther Educ* 1999; 11:1-2. ★

This article reports on the US author's experience with the use of a new device (the CLC2000) which is an adaptor designed to prevent retrograde flow of blood into the catheter lumen. During a ten week trial of the adaptor in outpatients catheter patency was maintained in all lines. While actual study numbers are not included, this result represented a marked improvement from their previous experience where at least two to four instillations of antithrombolytic agent were administered each month.

McKinnon BT. **Supply and demand- Adapting to the limited availability of urokinase for catheter clearance.** *Infusion* 1999; 5:41-3. ★

In this paper McKinnon outlines issues surrounding the availability of urokinase in the US and the FDA concerns associated with the deviations in the good manufacturing practice in the production of the US product.

Herbst SL, Kaplan LK, McKinnon BT. **Proactive management of catheter complications in home care.** *Infusion* 1998; 4:22-32. ★

The authors highlight the benefits of their approach to management of catheter occlusion, which incorporates the use of clinical protocols, standing orders and interdisciplinary collaboration. The patient, staff and cost benefits of this proactive approach are reported.

Summaries of articles with abstracts

Long E. **Common indications for physical therapy in the home care setting.** *Home Healthcare Consultant* 1998; 5:25-8.

Discusses Physical Therapy (PT) referral as part of quality, interdisciplinary care and how appropriate PT intervention can significantly improve patients' ability to safely live and perform activities of their daily living in their home environment.

Berhoff L. **Clinical pathways from conception to outcome.** *Topics Health Inform Management* 1998; 19:30-4. ★

Describes a comprehensive orthopedic clinical pathway for total joint replacement, which included acute, subacute, home care, and patient/family.

DeBrew JK, Barba BE, Tesh AS. **Assessing medication knowledge and practices of older adults.** *Home Healthcare Nurse* 1998; 16:686-92. ★

This article evaluates a medication assessment tool in 20 elderly adults admitted to a local home health agency. The authors claim the tool was useable by nurses, understood by patients, had adequate test-retest reliability and the results emphasise the need for thorough medication assessments of home health patients.

Salvatore T, Baxter T. **What's wrong with home care? An administrative ethics perspective.** *J Ethics Law Aging* 1998; 4(2):69-78. ★

Discusses the charges of fraud and improprieties in US home care, the contributing factors and the ethics from the patient care and home care management perspective.

Cherin DA, Huba GJ, Brief DE, Melchior LA. **Evaluation of the transprofessional model of home health care for HIV/AIDS.** *Home Health Care Services Quarterly* 1998; 17:55-72.

This paper compares the service delivery costs for home-care services in 549 AIDS patients randomly assigned to either a Multidisciplinary Transprofessional care-management approach or a traditional treatment approach. Service levels were comparable though labour delivery costs for an average patient's entire episode of home-care in the Multidisciplinary Transprofessional care-management group was 8% lower.

Fortin JD, Yeaw EMJ, Campbell S, Jameson S. **An analysis of risk assessment tools for falls in the elderly.** *Home Healthcare Nurse* 1998; 16(9):624-9.

Describes a collaborative project with a visiting nurse service to evaluate the utility of a risk assessment inventory that identifies risk factors for falls in elderly persons receiving home care. The majority of patients who experienced a fall used one or more assistive devices for ambulation.

Neal LJ. **Functional assessment of the home health client.** *Home Healthcare Nurse* 1998; 16:670-8. ★

This article describes the elements of function assessment, some of the most common instruments used and tips for assessing the home environment and the client's safety.

McNeal GJ. **Diversity issues in the homecare setting.** *Critical Care Nursing Clinics Nth Am* 1998; 10:357-68.

This article provides a framework, with supporting rationale, to assist the homecare nurse to gather culture-specific data from clients whose care delivery occurs in the home setting.

Duffy B. **Get ready — get set — go teach! Analyzing patients as learners in home healthcare.** *Home Healthcare Nurse* 1998; 16:596-602. ★

This article gives the home health nurse insight into the importance of thoroughly assessing the patient's learning style before developing and implementing the teaching plan.

Bean CA. **High-tech homecare infusion therapies.** *Critical Care Nursing Clinics Nth Am* 1998; 10:287-303. ★

This article discusses the four main vascular access devices used in home care and the therapies that have been adapted to the home.

Farrell M, Johnson T, O'Neal L, et al. **Care tracker: a new approach to nursing care in ambulatory settings.** *Nurs Admin Q* 1998; 23:72-81. ★

This article describes CARE TRACKER, an instrument to describe nursing encounters by type, intervention, staff and time, and track the care delivered and cost. The data can be used to calculate staffing requirements, staff mix, inservice needs, and the costs of existing and projected services.

Mallard CO, Mitchell RD. **Two approaches to developing a computer-based patient record for home health care.** *Home Health Care Manag Pract* 1998; 10:29-37. ★

The article describes two computer-based patient record systems developed by a large urban home health agency. One integrates a state-of-the-art pen-based computer system into a legacy mainframe system, and the other creates an entirely new information system on laptop computers.

Carefoote RL. **Health care issues: managing services and people in home care: today's challenge.** *Can J Nursing Admin* 1998; 11:77-94.

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Disclaimer:

Whilst every effort is made to reliably report the data and comments from the journal articles reviewed, no responsibility is taken for the accuracy of articles appearing in The HITH Review, and readers are advised to refer to the original papers for full details of the research.

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