

Infusion Therapy from Hospital to Home – Bridging the Gap

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Disclosures

- Have been compensated for presentations by BD Medical, 3M, Access Scientific, Genentech
- Advisory Board Member – ivWatch, Baxter, Teleflex
- No products will be addressed in this presentation.

Objectives

1. Describe the scope of practice and 4 components of a model for safe home infusion therapy.
2. Discuss critical issues to address during the transition from acute to home care.

“My view you know is that the ultimate destination is the nursing of the sick in their own homes...I look to the abolition of all hospitals and workhouse infirmaries. But it is no use to talk about the year 2000.”

Florence Nightingale, 1867

Major shift in healthcare delivery: Acute, inpatient → ambulatory & community-based care settings

- Demographic changes – the aging population
- Increased prevalence & better management of chronic conditions
- Expansion of post-acute care settings
- Advances in technology
- Restructuring of healthcare systems including shifts in policy and reimbursement

Growth of the Alternate Site for Infusion Therapy

- It is currently estimated to represent approximately \$9 - 11 billion dollars a year in U.S. health care expenditures, serviced by over 1,500 infusion pharmacy locations

National Home Infusion Therapy Association
(NHIA)

<http://www.nhia.org/faqs.cfm>



Scope of Home Infusion Therapy

- Antimicrobial drugs
- Chemotherapy
- Parenteral nutrition
- Opioid analgesics
- Hydration fluids
- Immunoglobulins: IVIg, SCIg
- Cardiac: positive inotropes for end-stage heart failure, bridge to transplant; IV diuretics
- Others: enzyme replacement therapies
- Growing area: biologic therapies

Current Trends in Home Infusion Therapy

- Reducing risk for hospitalization among older adults with chronic illnesses & focus on palliative care
 - Managing fluid overload secondary to heart failure with IV/subcutaneous infusion of diuretics
 - Management of acute or chronic dehydration with IV fluid replacement
- Increasing administration of biologic therapies in the home

- Caccialanza, R., Constans, T., Cotogni, P., Zaloga, G.P., Pontes-Arruda, A. (2016) Subcutaneous infusion of fluids for hydration or nutrition: a review. *Journal of Parenteral and Enteral Nutrition* Nov 2. pii: 0148607116676593. [Epub ahead of print]
- Watson C, Annus, C (2013) Intravenous diuretic delivery in the home. *Nursing Times* 109 (14), 20-21.
- Zacharias, H et al (2011) Is there a role for subcutaneous furosemide in the community and hospice management of end stage heart failure? *Palliative Medicine* 25 (6), 658-663.

Impact of Technology in Home Infusion

- Reliable vascular access devices
- Simplification/
improved procedures
 - Prefilled syringes
 - Needleless connectors
 - Manual flow regulation for gravity infusions
 - Disinfection caps
- Electronic infusion devices
- Elastomeric devices



Overarching Goal of Home Care



- To maintain patients safely in the home setting and prevent rehospitalization.
- The overall safety of home infusion therapy has been established over the past 30-some years
 - However....it is a “high risk” area of practice for patients who require an invasive device and may be receiving high-risk drug infusions
- Safe and effective delivery of home infusion therapy is ensured when the home care agency provides knowledgeable and qualified home care nurses and when there are structures and processes in place to ensure quality patient care.

Gorski, LA (2017) *Fast facts for nurses about home infusion therapy: The expert's best practice guide in a nutshell*. Springer Publishers.



Addressing Infection Concerns



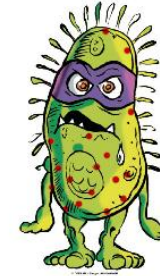
- Risks of infection for patients with VADs believed to be low – scarce recent data
- Home care advantages:
 - Risk of transmission associated with multiple patients/multiple providers in an institution eliminated in the home setting
- Home care risks:
 - Patients more active – bathing, exercising, gardening, playing with pets
 - Patient/caregiver care of VAD/infusion administration -- may or may not be a risk

Environmental Factors: Risk Factors for Infections?

- Common exposures including well water, cooking with raw meat, soil exposure through yard work, or having a pet in the home were not found to increase the risk of CVAD complications in a recent prospective study.
- PN was found to be a significant risk factor.

Keller, S.C., Williams, D., Gavgani, M., Hirsch, D., Adamovich, J., Hohl, D...Perl, T.M. (2016) Environmental exposures and the risk of central venous catheter complications and readmissions in home infusion therapy patients. *Infection Control & Hospital Epidemiology* 38 (1), 68-75.

Home Care: Patient Risk Factors for Infection



- 2014 systematic literature review
- 25 studies met inclusion criteria
 - Note >80% of studies use data collected prior to 2005
- Great variation in risk factor identification and infection rates
- In relation to home infusion therapy
 - **Patients receiving PN at greater risk than those receiving other infusion therapies**

Shang et al. (2014) The prevalence of infections and patient risk factors in home health care: A systematic review. *AJIC* 42, 479-484.

Home Care Infections: A 2015 Report

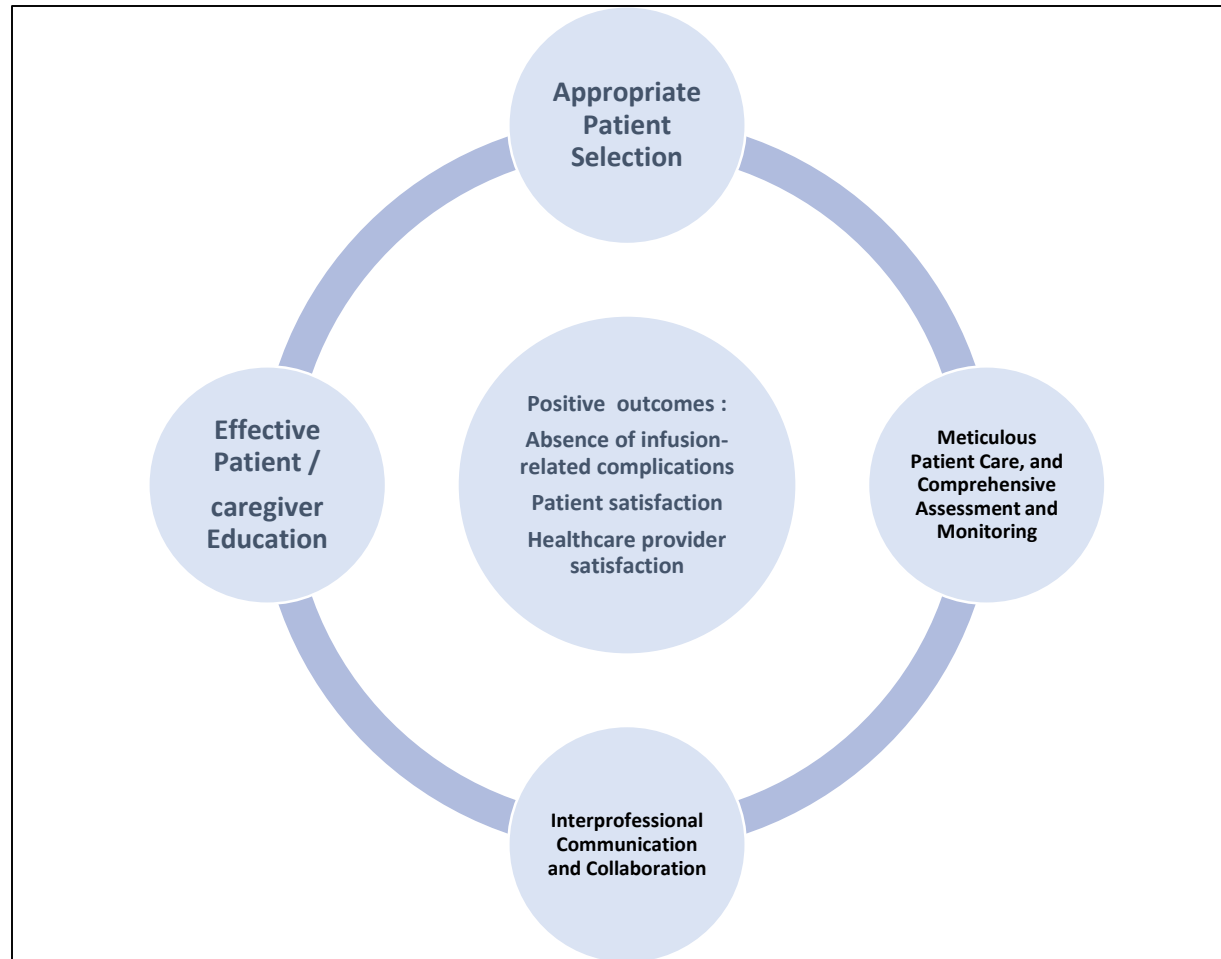
- Use of national Outcome and Assessment Information Set (OASIS) data
- Describe rates of hospitalization and emergency care use caused by infection
- Sample: 199,462 patients from >8200 home care agencies
- 36,330 unplanned hospitalizations
 - 17% (n=1,587) caused by infections
 - **0. 3% (105) caused by IV-catheter related infection**
 - **5,958 patients received IV therapy**
 - Significant characteristics associated with infections: younger age, more likely men, more likely white, had cancer or renal disease, more likely to be receiving IV therapy or parenteral nutrition
- Limitations
- Infection is a serious problem in home care

Shang J, Larson E, Liu J, Stone P. (2015) Infection in home health care: Results from national Outcome and Assessment Information Set data. *AJIC*.



Gorski Model for Safe Home Infusion Therapy

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AAMI Work

- October 2013: Summit on Healthcare Technologies in Non-Clinical Settings – held by AAMI and the United States FDA
- 150 summit participants
- Premise:
 - Increasing movement from hospital based care to home care
 - There is advancing technology to meet lay person needs (e.g. telehealth, monitoring systems, smaller/portable products)
- 2 themes:
 - Advocate a model for safe/coordinated care
 - Use a systems approach- encompassing people, workflows, therapies, technology, and payment –to move patient safely from hospital to home

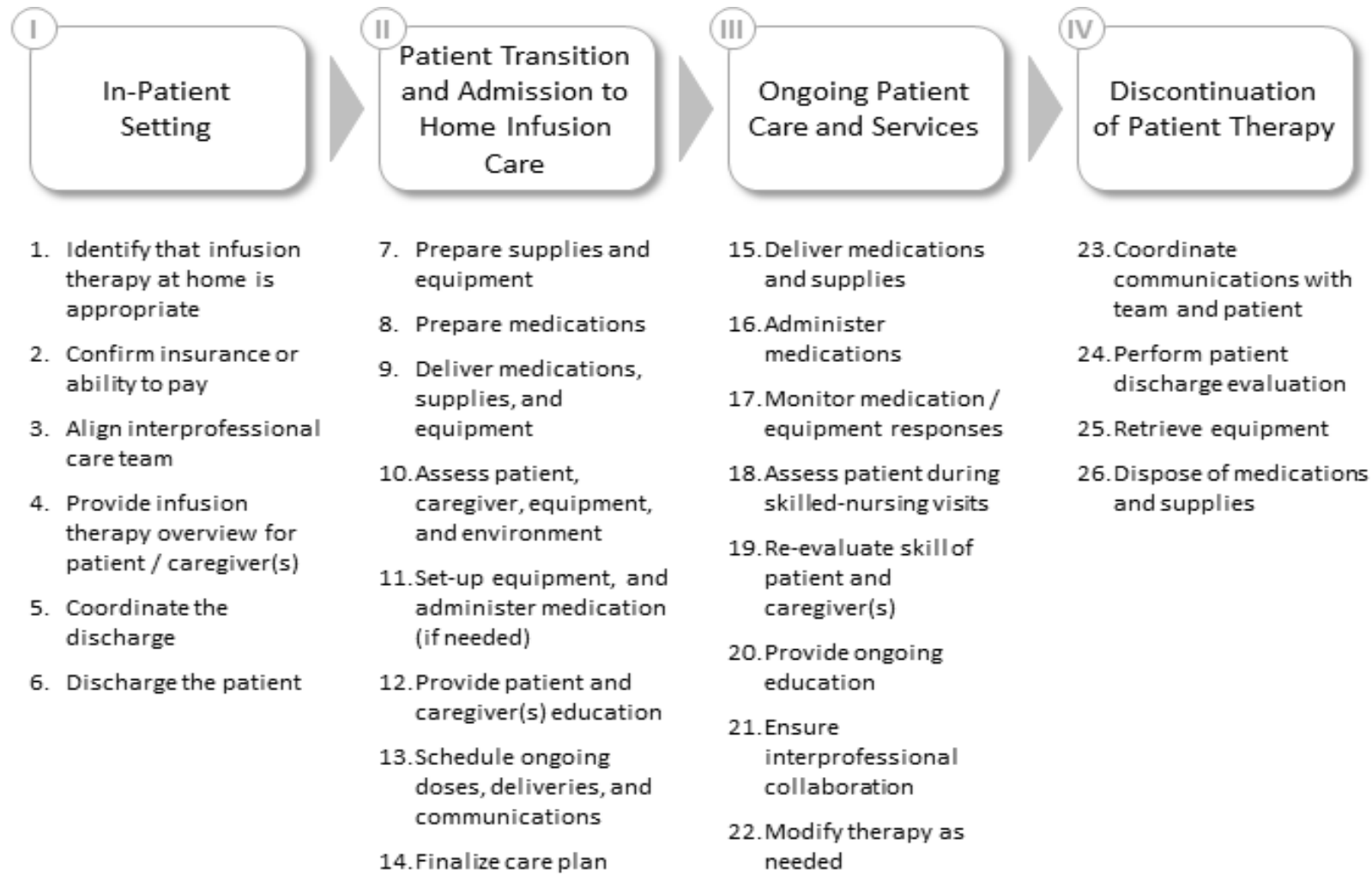
AAMI Foundation Post-Summit Work: Home Infusion Therapy

- Develop a systems approach on a smaller scale
- 2016: A team of subject matter experts began to work on the process mapping for infusion therapy back to the home
- The mapping process demonstrates what a complete or best case mapping should be with explanations of each job or role, and the subsequent tasks for each job or role.
- It is important to note that this mapping is not sequential; some jobs or roles may happen concurrently and, if there are changes made in the diagnosis or therapy, some jobs or roles may have to recur.

AAMI (2017) Infusion therapy: mapping the process from hospital to the home.
www.aami.org



Infusion therapy Process Mapping from the Hospital to the Home




1. Identify that infusion therapy at home is appropriate

- Needs can be met at home
- Patient likely to require home infusion therapy
- Patient/caregiver willingness
- Assemble interprofessional team involved in transition

2. Confirm insurance or ability to pay

- Determine financial means
- Determine coverage, any patient co-pays, need for prior authorization
- Identify a home infusion provider within the patient's insurance network

Gorski Model:
Additional question to guide the transition process -- Know your community!



Does the home care agency have competent nurses and up-to-date policies and procedures, including admission criteria, related to the type of infusion therapy that the patient requires (e.g. inotropic infusions, intraspinal infusions, parenteral nutrition)?

Medicare Reimbursement

- Medicare Part D
 - Most infusion drugs are covered (the drug and a retail-based dispensing fee)
 - However.... *does not cover costs associated with the safe provision of home infusion drugs (specialized infusion-related services, equipment and supplies)*
 - Most Medicare beneficiaries do not have access to infusion drugs in the home, despite that the drugs are in fact covered in that setting.
- Medicare Part B
 - Coverage under the DME benefit for a limited number of drugs that are administered using a mechanical or electronic external infusion pump.
 - Only a few drugs are covered under this benefit, such as some anti-viral drugs, chemotherapy drugs, inotropic therapies, pain management drugs, and SCIg
- Medicare Part A
 - Covers home nursing visits for beneficiaries receiving home infusion therapy
 - Criteria must be met (homebound/intermittent skilled home nursing services.)
 - Some Medicare fee-for-service beneficiaries who do not qualify for the Medicare home health benefit may have other insurance that covers some of the costs of home infusion that are not reimbursed by Medicare

<https://www.nhia.org/resource/legislative/documents/NHIAWhitePaper-Web.pdf>



Pending US Legislation: The Medicare Home Infusion Site of Care Act of 2015

- Issue: Infusion therapy is fully covered by Medicare in hospitals, skilled nursing facilities (SNFs), hospital outpatient departments (HOPDs), and physician offices, but not in the home
- Intent of bill:
 - A pathway for reimbursement for the professional services, supplies and equipment associated with infusion therapy in the home under Medicare Part B – this would enable current Part D coverage of infusion drugs
 - Requirement for development of quality standards to ensure the safe and effective provision of home infusion therapy.
 - Allow the Medicare program to realize the efficiencies and positive outcomes that home infusion therapy has brought to private sector patients for decades.

<https://www.nhia.org/resource/legislative/MedicareHomeInfusionSiteofCareAct.cfm>



3. Align interprofessional health care team

- Patient specific constraints
- Home environment-specific constraints or risk factors
- Caregiver needs
- Capabilities, abilities, and understanding
- Prescription needs: type of VAD needed, supplies
- Transition from hospital back to home
- Timely admission for home infusion services (e.g. weekend, evenings)



Gorski Model: Questions to guide the transition process

Are there any **KNOWN** home environment or safety issues?

Is the patient and/or caregiver(s) accepting of the home care plan?

Is the patient clinically stable?

Is the VAD (or subcutaneous or intraspinal device) and the infusion administration method appropriate for the patient and the prescribed infusion therapy?

If a first dose is to be administered at home (e.g. antimicrobial), is it safe to do so?

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Gorski Model: Patient Education

- Effective teaching is unquestionably essential to the provision of safe home infusion therapy.
- Technical skills in infusion therapy procedures are important, but equally important is the nurse's skill in educating the patient to perform those same infusion procedures.
- In the majority of cases, home infusion therapy procedures are taught to and performed by patients and/or their caregivers.
- It is important to recognize that when patients are not effectively taught, the risk for complications such as infection or adverse drug reactions is increased.

4. Provide infusion therapy overview for patient/caregiver

- Prepare patient to administer infusion therapy safely
- VAD care instruction including s/s of complications
- Safe and appropriate storage of supplies/medications
- Accessible area to administer within the home
- s/s of medication side effects/adverse reactions
- Billing and reimbursement explained

Home infusion therapy teaching in the hospital – what can/should be included?

5. Coordinate the discharge

- All information into the medical records
- Finalize discharge date
- All appropriate medical records to the home infusion provider
- Final orders (VAD locking, any specific/unusual orders, laboratory studies)
- Transportation as needed

Is there a transition plan for continuation of the prescribed therapy to home care?

So....where can we improve the transition process?

From AAMI Foundation work:

- Improve discharge planning
 - Consistent and dedicated discharge planners
 - Use of a discharge checklist
- Improve teaching of patient and caregiver while in the hospital
 - Suggest involvement of a home care liason
- Consistent interprofessional health care teams
 - Leads to poor communication and collaboration between those involved in transitioning patients from hospital to home

Summary

- Home infusion therapy continues to grow in scope
- There is great opportunity to improve the transition process as patients move from hospital to home
- Patient outcomes and the patient experience are optimized when the discharge plan is well-coordinated and organized

