Home Infusion Therapy 101
A Core Review for the Non-Clinician

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Clinical trials and off-label/investigational uses will not be discussed during this presentation.
Learning Objectives

• Identify the different types of IV access devices
• Describe the methods used for infusing therapies in the home
• Understand the different types of therapy delivered in the home setting
• Identify which physician practices may prescribe home infusion therapy
INFUSION BASICS
Background and Overview

• Community care of infusion patients has been in existence for decades
• Home infusion is one of the largest growing sectors of health care
• Clients managed in the community are quite different than in the hospital setting
• Catheter care and maintenance varies from hospital to community environment
Background and Overview

• Diverse ethnic cultures affect how the community is educated on IV therapy
• Therapy can often be very complex
• Treat the whole patient and often the entire family unit
• Care is provided across the continuum
Patient Population

- Multi-generational
- Adults
- Pediatrics
- Geriatriecs
- Culturally diverse
Community Walls are Different
From Case Management to Home

Obviously this is a collaborative effort

- Hospital case managers
- Discharge planners
- Long-term care (LTC) facilities
- Physicians’ offices
- Insurance companies
- Self-referral
Patient Evaluation for Home Care

- Demographics
- Insurance Reimbursement
- Diagnosis
- Prescriber Information
- Type of Drug

- Equipment Needs
- Vascular Access
- Community environment (electricity, water, safety)
- Patient/caregiver willingness to learn
So Why IV Medications/Nutrition?

• The IV route is typically used when the oral route failed
• The patient’s situation may prevent them from being able to take oral medications/food
• Some disease states cannot be treated with oral medications/food
Routes of Administration

IV ACCESS DEVICES
Routes of Administration

Many factors determine catheter selection

- Length of therapy
- Therapy being administered (pH, osmolarity)
- Patient lifestyle and age
- Safety (infection risk)

Some catheters can be placed by the RN in the home
Routes of Administration

- Subcutaneous (Sub Q)
- Peripheral short catheter (PIV)
- Midline
- PICC (peripherally inserted central catheter)
- Non-tunneled central catheters
- Tunneled central catheters
Subcutaneous Route

Subcutaneous set

Advantages
• Least invasive route of administration
• Patients can become independent in their therapy
• Does not require nursing to place the catheter

Disadvantages
• Not appropriate for all medications, especially those that are harmful to subcutaneous tissue
• Can be painful
Peripheral Catheters

Short Peripheral Catheter

Advantages
• Low cost
• Can be placed in the home by the nurse

Disadvantages
• Not appropriate for drugs with pH or osmolarity outside the “safe” range
• For therapies < 1 week
• May require frequent nursing visits
• May result in interruptions of service
Peripheral Catheters

Midline Catheter

*Advantages*
- Can dwell 1-4 weeks
- Can be placed in the home by a specially trained RN

*Disadvantages*
- Not appropriate for drugs with pH or osmolarity outside the “safe” range
- Cannot be used for lab draw
- Requires a specially trained RN for placement
Central Catheters

**PICC Line**

*Advantages*

- May dwell up to a year
- No limitations on medications that can be infused
- Labs can be drawn from it

*Disadvantages*

- May need to be placed in hospital
- Visible and requires daily maintenance
Central Catheter

Tunneled Catheter – Groshong or Hickman

Advantages

• *May dwell* for years
• No limitations on medications that can be infused
• Labs can be drawn from it

Disadvantages

• Requires surgery to insert and remove
• Visible and require daily maintenance
Central Catheter

Implanted Port

Advantages
- May dwell for years
- No limitations on medications that can be infused
- Monthly maintenance when not accessed continuously
- Not visible when not accessed

Disadvantages
- Requires surgery to place
- Requires needlestick to access
METHODS OF ADMINISTRATION
Alleviating the fear!
Methods of Administration

• IV Push
• Gravity
• Home-mix
• Elastomeric Device
• Ambulatory Infusion Pump
• Syringe pump
• Pole mount pump (Stationary Pump)
Method of Administration

IV Push Method

• Patient provided with pre-filled syringe or taught to draw up medication
• Simple method of administration – easy to teach
• Requires very little equipment, cost effective
Method of Administration

Gravity Infusion

- May use gravity tubing or rate-control (dial) tubing
- More difficult to teach the patient
- Less expensive than pump or elastomeric
- Increased risk of patient contamination of equipment
Method of Administration

**Home-Mix**

- Used for medications with short stability once mixed
- Patient is taught to mix the drug just prior to administration
- Gravity or rate regulator tubing used to administer once mixed
Method of Administration

Elastomeric Device

• Very user friendly
• Enhances patient compliance
• Decreased risk of patient contamination
• Very easy to teach, reducing nursing time
• Increased cost over gravity or IV push methods
Method of Administration

Ambulatory Infusion Pump

- Multi-therapy mode may include intermittent, continuous, step and patient controlled analgesia (PCA) administration profiles
- Also used for medications that require specific rate regulation
- May be utilized for patient convenience
- Parenteral nutrition (PN), PCA, inotropes always on a pump
Method of Administration

Syringe Pump

- May be used for SQ infusions
- Utilized for IV infusions with small volumes, such as pediatric patients
- May be continuous or intermittent infusions
Method of Administration

Pole Mount Pump (Stationary Pump)

- Typically used for large volume infusions (hydration, IVIG etc.)
- More cumbersome in the home for the patient
- Patient’s ability to be ambulatory more restricted while doing their infusion
CORE THERAPIES:
WHAT ARE THEY AND WHO PRESCRIBES THEM
Who do you sell to?

• Physicians, Nurse Practitioners, Physician’s Assistants
• Insurance Carriers
• Hospital Discharge Planners
• Case Managers
• Alternate-site and Long Term Care facilities
What are Your Company’s Core Therapies?

- Anti-Infectives
- Parenteral Nutrition
- Inotropic Therapy
- Immune Globulin
- Enteral Therapy
Anti-Infectives

Objectives

• Used to either kill a bacteria or inhibit its growth
• In most countries, antibiotics are the second most widely used medication after simple analgesics
Anti-infectives

Include

• Anti-fungals, anti-virals, anti-bacterials
• Can be administered by several methods
  – IV push
  – Gravity tubing
  – Elastomeric pump
  – Intermittent ambulatory infusion pump
  – Pole mount pump
  – Intramuscular (IM) injection
Anti-infectives

Common medications (not all inclusive)

• Cephalosporins (cefepime, ceftazidime)
• Vancomycin, gentamicin
• Daptomycin, Penicillin, Ampicillin
• Amphotericin
• Meropenem
Anti-infectives

Target Referral Sources

• Infectious disease physicians
• Primary care physicians
• Hospital discharge planners
• Case managers
• Long-term care facilities
Parenteral Nutrition

Objective:

Parenteral Nutrition (PN, formerly referred to as “Total parenteral nutrition or TPN”) is feeding a person intravenously, bypassing the usual process of eating and digestion. The person receives nutritional formulas containing glucose, amino acids, lipids and added vitamins and other nutrients as required to meet individualized needs.
PN – Adult Disease States

- Inflammatory bowel
- Failure to thrive
- Hyperemesis
- Pancreatitis
- Crohn’s disease
- Trauma
- Malnutrition
- Bowel rest

- Head and neck cancer (esophageal)
- Gastric cancer
- Stroke with difficulty swallowing (dysphagia)
- Motility disorders
- Mild to moderate short bowel (mesenteric infarction)
PN - Pediatric Disease States

• Failure to thrive

• GERD (Gastroesophageal reflux disease)

• Prematurity

• Cerebral palsy

• Bowel anomalies

• Other genetic or congenital disorders
Basic Components of PN

- Dextrose (Carbohydrate)
- Amino Acids (Protein)
- Lipids (Fat)
- Electrolytes
- Multivitamins
- Trace Elements
- Water
PN – Patient Additives

- Insulin
- Famotidine
- Carnitine
- Multivitamins
- Ranitidine
- Vitamin B12
- Thiamine
- Folic Acid
- Zofran
- Cysteine
Monitoring Protocols for PN

- Lab work (Complete Blood Count [CBC], Complete Metabolic Panel [CMP], Magnesium, Phosphorous, Triglycerides)
- Blood sugars
- Intake and output measurements (I/O)
- Weight
- Monitoring temps
- Monitoring IV sites
- Education
- Patient Complaints
- Assessment of Infants (irritability)
Practical Aspects of Home Administration

- Sterility of product
- Stability of product
- Pharmacy preparation
- Nurse preparation
- Condition of home environment
- Patient Education
- Medicare coverage criteria is very strict
Parenteral Nutrition

• Target Referral Sources
  – Hospital Discharge planners
  – Case Managers
  – Gastroenterologists
  – Primary Care Physicians
Inotropic Therapy

Overview:

About 5 million people in the U.S. suffer from congestive heart failure—a chronic, progressive weakening of the heart muscle that results mainly from heart attacks or infections. Over time, the heart expands and the muscle grows so thin that it can no longer pump blood adequately.
Inotropic Therapy

Definition and Action

• An inotropic medication is one that increases the force of myocardial contraction

• Forces heart to squeeze more forcefully in effort to pump sufficient blood flow supply from the ventricles to meet the individual patients metabolic needs without an increase in oxygen consumption
Inotropic Therapy

Inotropic drugs commonly used in the home

Milrinone (Primacor)
Dobutamine
Dopamine
Inotropic Therapy

Medicare Coverage Criteria

• Data collection regarding clinical testing may be required for insurance coverage
• Criteria is strict
• Maximum oral medication management required
• Inotrope Therapy Data Collection Form
# Inotropic Therapy – Data Collection Form

**Home Parenteral Inotropic Therapy: Data Collection Form**

- Patient’s Name: ___________________________ HIC#: ___________________________
- Neither the supplier nor anyone in a financial relationship with the supplier may complete the information below.
- 1) Results of invasive hemodynamic monitoring or impedance cardiography:
  - Cardiac Index
  - Wedge Pressure
  - Date
  - Before inotrope infusion ____________ ____________ ____________
  - On inotrope infusion ____________ ____________ ____________
  - Drug ______________ Dose __________________________ mcg/kg/min
- 2) Cardiac drugs (digoxin, diuretics, vasodilators) immediately prior to inotrope infusion (list name, does, frequency):
- 3) Does this represent maximum tolerated does of these drugs?
- 4) Breathing status (check in each column):
- 5) Initial home prescription: Drug ________________ ________________ mcg/kg/min
  - _______ hrs/day _______ days/week (or every ______ days).
- 6) If continuous infusion is prescribed, have attempts to discontinue inotrope infusion in the hospital failed?
- 7) If intermittent infusion is prescribed, have there been repeated hospitalizations for heart failure during which parenteral inotropes were required?
- 8) Is the patient capable of going to the physician for outpatient evaluations: ________________
- 9) Is the routine electrocardiographic monitoring required in the home?
- The above statements and any additional explanations included separately are true and accurate and there is documentation present in the patient’s medical record to support these statements.
- Physician Signature: ___________________________ Date: __________
- Physician Name Printed/Typed: ___________________________ UPIN# __________
- Physician Specialty: ___________________________
Inotropic Therapy

Patient Selection and Criteria

– Be reliable, teachable and compliant
– Live within a reasonable distance from the office/nursing staff
– Have a functioning telephone
– Have a significant other living with them who is also trained
– Have a functional central line
Inotropic Therapy

Target Referral Sources:

• Cardiologists
• Step Down Units
• ICU/CCU
• Transplant centers
• Hospice agencies
Immune Globulin G (IgG)

Objective

• Immune Globulin is a blood product derivative that is administered either IV (IVIG) or Subcutaneously (SCIG)

• Used to treat primary immune deficiencies and some neurologic disease states

• Exceeds a billion $ industry in the U.S. and growing as new indications are approved
IgG Therapy—Approved Indications

- Idiopathic Thrombocytopenia (ITP)
- Primary Immunodeficiency (PID)
- Chronic Lymphocytic Leukemia (CLL)
- Pediatric HIV infection
- Kawasaki Disease
- Graft versus host disease (GVHD)
- Chronic inflammatory demyelinating polyneuropathy (CIDP)
Administration of IVIG

• Administered every 3-6 weeks
• Peripheral or central line
• Administered over 4-8 hrs based on product guidelines. Begin at a slow rate and titrate to the optimally tolerated infusion rate
• Adverse reactions such as chills, tachycardia and malaise are associated with increased infusion rates
Administration of IVIG

• Nurse to monitor vital signs during initiation of therapy and during titration to goal rate
• Use of IV pump is common to control infusion rate
• Pre-treat patients prior to infusion to reduce or prevent infusion related reactions
  – Acetaminophen
  – Diphenhydramine
  – Corticosteroid
Administration of SCIG

- Administer Sub Q into multiple sites via one pump
- Weekly infusions
- Steady level of serum IgG
- Fewer adverse reactions
- Patients can learn to self-administer
Administration of SCIG

Sub Q Administration Sites
Immune Globulin

Target Referral Sources

• Neurologists
• Hematologists
• Immunologists
• Transplant centers
• Pediatricians
• Infectious disease physicians
Enteral Therapy
Enteral Therapy

Indications for therapy

• Dysphagia (difficulty swallowing)
• Gastrointestinal motility disorders
• Malnutrition/malabsorption disorders
Enteral Routes of Administration

• Nasogastric (NG) tube or Nasojejunal (NJ) tube is a flexible tube made of rubber or plastic that is placed through the nose, down the back of the throat and down the esophagus into the stomach (NG) or jejunum (NJ).
Enteral Routes of Administration

• A Gastrostomy Tube (GT), or Percutaneous Endoscopic Gastrostomy (PEG), is a tube that goes into the stomach. It is the most common feeding tube used in home care.
Enteral Routes of Administration

- A jejunostomy tube (J‐tube) is a feeding tube that is surgically placed into the small intestine. One end of the tube comes out through the skin of the abdomen.

- A gastrostomy – jejunostomy tube (GJ tube) is a feeding tube that is placed into both the stomach and the intestine (jejunum).
Enteral Method of Administration

- Bolus/syringe feeding
- Gravity feeding
- Intermittent or continuous feeding via enteral pump
Enteral Therapy

Target Referral Sources
• Hospital discharge planners
• Case managers
• Gastroenterologists
• Primary care physicians
Additional Therapies

• Pain Management
• Steroids
• Chemotherapy
• Hydration
• Specialty Medications
Conclusion

Selling home infusion involves:

• Understanding the devices, equipment, patient selection criteria, medications, and insurance coverage criteria

• Collaboration between the sales team, the operations team, the physician and the discharge planner is essential for a smooth transition home for your patient
Questions?

It's QUESTION TIME!!