

Medical Home HSCT Care

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Current Care Model since 1992

- Traditional Inpatient Unit-16 beds
 - Allogeneic Myeloablative HSCT
 - Until engraftment
 - Autologous HSCT
 - BEAM regimen
 - CBV regimen
 - Until prep regimen completed
 - Daily follow up in day hospital and reside locally
- Outpatient Day Hospital- 7 day access
 - Autologous HSCT
 - Melphalan
 - Allogeneic Nonmyeloablative HSCT
 - Allogeneic Reduced Intensity HSCT
 - Autologous following preparative regimen given inpatient
 - Apheresis
 - Photopheresis


Current Care Model since 1992


- Inpatient unit main hospital
- Outpatient day hospital is 3 blocks from main hospital
- Pharmacy on site- not dispensing
- Lab services on site (routine)
- Shuttle service between buildings
 - Routine chest x-rays
 - Procedures
- Courier service
 - Transfusion services
 - Other lab services
- Local corporate apartment housing options

Off hours coverage

- Inpatient HSCT unit is the back up at night
- Thoroughfare via Duke ED
 - Safest route into the hospital
 - Easy parking
 - Communication with inpatient unit
- Directly admitted to HSCT unit
- Treatment in ED as appropriate


2011

- Dr. Ringden visited Duke ABMT Program to lecture at grand rounds
- February over dinner at 2011 Tandem..... 
- May 2011- 48 hours spent with the staff at Karolinska to observe home care
- Champion Krista Rowe, RN, MSN, AOCNS
- July 2011- first draft of protocol out to team for review



Implementation


- IRB approval
- Risk management approval
 - Use of technology
 - Blood transfusions in the home
 - EHR security
- Insurance approval
 - Upfront communication with key payers
- Transfusion service collaboration
- Pharmacy collaboration
- EPIC implementation summer 2013
- Buy in from the ABMT Team



Objectives

- Primary
 - Compare bowel microbiota before and during the first 100 days between home treatment and clinic treatment (living at home)
- Secondary
 - Assess infection rates
 - Assess nutritional status (PG-SGA)
 - GvHD incidence
 - Morbidity/mortality
 - QOL (FACT-BMT)
 - Cost comparison

Candidates

- Within 90 minute driving distance to Duke 
 - 3 counties
 - All subjects have been within 30 minutes to Duke
- HSCT patients from any source
- Options
 - Live at home/Treat at home
 - Live at home/Treat at clinic daily
- No active infections

Organization

- Staff caring for HSCT patients should be experts
 - Declined to use home care nurses
 - Team from inpatient unit and outpatient day hospital
 - Did use home care expertise for training of HSCT nurses
 - Same standard of care as provided in traditional setting



Is every local patient a candidate?

- Safety first
 - Fall risks
 - Infection risk
 - Caregiver 24/7
 - Children in the home
 - Food safety
- Pets allowed in the home but not during treatment times
 - Assess the pet living arrangements individually



Reimbursement Issues

- Only private payers eligible
 - No medicare/medicaid
 - Advanced practice providers are billed as home visits
 - Attending physician “remote visit” is unbillable encounter
 - Most private payers pay on a case rate
 - Language
 - Transplant nurses as opposed to home health nurses

Care at home model

- Conditioning regimen administered in traditional setting
- HSCT administered in traditional setting
- Discharge for home care on DOT +1
- If naïve to transfusions, first transfusion administered in ABMT day hospital
- Methotrexate for GvHD prophylaxis administered in ABMT day hospital

Care at home model

- Advanced practice provider
 - Early am visit
 - Assessment
 - Vital signs and draw labs
 - Return to ABMT day hospital to run labs and discuss assessment with ABMT team
- RN visit
 - Administer therapy based on lab results
 - Blood products
 - Electrolyte supplementation
 - IV fluids
 - Symptom management
 - Education
- Supplies
 - Set up a treatment station in the home
 - Scale
 - CVC supplies



Embracing technology

- Daily Facetime with attending physician
- Ability to Facetime with consultants
 - Registered dietician
 - Social worker
 - Financial counselors
 - Clinical Nurse Specialist













Results

- First treat at home transplant September, 2011
- Ability to treat 1 at home patient at a time
- Treated 7 Home based transplant patients
 - Short hiatus 2012 due to staffing issues
 - Hiatus 2013 during EPIC implementation
 - Last half of 2014- 8 maternity leaves

Yes there are challenges

- Safety first
 - Environmental issues
 - Staffing issues
 - Not everyone is a candidate
 - Not all staff members are enthusiastic
- Resource allocation
 - Physician
 - APP's
 - RN's
- Cost unknown

Patient/Staff feedback

- Overall positive
- Unexpected feedback
 - Feeling of isolation
 - Began visits to the clinic daily
 - Palliative care
- A realistic view of home environments that we send ALL our HSCT patients home to
- A certain intimacy providing care in the patient's living room
- QOL data
 - Seeing positive trends but too few numbers to compare to our historical data

Early data

Average # home visits	12
Average # days of IV antibiotics	4.3
Average # traditional visits	3.6
Overall # ED visits	1
Average # days of transfusions	3.3

****Based on 6 autologous transplant patients.
 Have completed 1 MUD patient
 23 daily visits
 0 ED visits
 11 inpatient days for mucositis
 3 days of transfusions

Live at home/Come to clinic

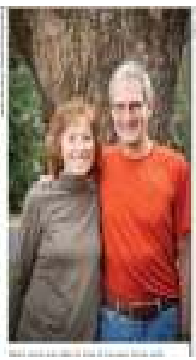
- Collecting same data
- Increased the range for patients to live at home
 - Traditionally Durham proper
 - Expanded to 3 county area
- 21 subjects

Duke Performs First At-Home Bone Marrow Transplant

When Duke University Health System performed the first autologous bone marrow transplant for a patient living at home, it was a landmark moment for the institution.

The patient, a 62-year-old man with multiple myeloma, had been living at home for several months before the transplant. He had been receiving treatment at the hospital, but his condition had improved significantly. The transplant was performed at the hospital, but the patient remained at home throughout the process.

The transplant was performed by a team of experts at Duke University Health System. The patient was monitored closely throughout the process, and his condition remained stable. The transplant was a success, and the patient is now living at home.



Not to be outdone by
Karolinska!



"The microbe is nothing, the
terrain is everything."

-Claude Bernard
Father of "blind experiments" and homeostasis
