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
- 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

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<table>
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<tr>
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<tbody>
<tr>
<td>Average # home visits</td>
<td>12</td>
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<tr>
<td>Average # days of IV antibiotics</td>
<td>4.3</td>
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<tr>
<td>Average # traditional visits</td>
<td>3.6</td>
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<tr>
<td>Overall # ED visits</td>
<td>1</td>
</tr>
<tr>
<td>Average # days of transfusions</td>
<td>3.3</td>
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****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
Not to be outdone by Karolinska!

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

-Claude Bernard

Father of "blind experiments" and homeostasis