bmTIPS™
(bone marrow Transplant Information Patient System)

“Transforming the Patient Transplant Management Workflow Process”
bmTIPS™

- BMT Program Overview
- Motivation
- Workflow and Screens
- Key Advantages
- System Specifications and Future Enhancements
- Questions
BMT Program Overview

- Number of MDs = 6
- Number of NPs = 4
- Number of BMT RN Coordinators = 5
- Financial Coordinator = 1
- Data Control Coordinator = 1
- Quality Control Coordinator = 1
- Manager = 1
- Number of BMT Patients per year = 120-150
Motivation

- Enhancing Quality of Care
  - Improve communication and coordination
  - Reduce time to transplant

- Reducing Cost of Care
  - Reduce non-value added work processes
  - Increase time for direct patient care activities

- Improving Reporting Capabilities
  - Single source of data
  - Increase accuracy of information flow
  - One-click report generation
Enhancing Communications

Decentralized

Centralized Data Hub
Workflow Stages

Intake
- Patient first presented at weekly BMT meeting
- Patient accepted to program and is in pre-transplant work-up stage (ins, mob., collection etc.)
- MD

Pre-Transplant
- RN

Admit/Prep Regimen
- RN
- Patient has been admitted and is undergoing preparative therapy
- Patient has been transplanted and is under daily care

Post-Transplant
- MD/RN

Discharge/Follow-up
- MD/RN
- Patient discharged from hospital / in follow-up stage
### MD Management

#### Disease Information
- **Disease:** multiple Myeloma
- **Specific Disease:** MM: IgG Lambda
- **Date of Diagnosis:** MM: IgG Lambda
- **Disease Stage at Diagnosis:** MM: IgM Kappa (not Wald macroglob)
- **Meeting Presentation:** MM: light chain only Kappa
- **Status at Present. Dcmtd by:** MM: non-secretory Kappa
- **Disease Comments:** MM:Myeloma/Amyloidosis

#### Comorbidity Score:
- **Comorbidity Score:** 0

#### Performance Score:
- **Performance Score:**

**Additional Information:**
- He also has a history of recurrent kidney stones.
## Comorbidities

<table>
<thead>
<tr>
<th>Condition</th>
<th>Date</th>
<th>Score</th>
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<tbody>
<tr>
<td>Arrhythmia</td>
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<tr>
<td>Cardiac</td>
<td></td>
<td>1</td>
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<tr>
<td>Cerebrovascular disease</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Coronary artery disease*</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>EF of ( \leq 50% )</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Heart valve disease</td>
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</table>
Pre-TX Comments:

4/22/11: Pt successfully has finished his stem cell collection and will be admitted to hospital next week.

4/18/11: Pt is starting his stem cell harvesting today.

4/10/11: Pt starts GCSF mob this Thursday.

4/6/11: Awaiting for BM biopsy and CXR results to submit the w/u to insurance company.

3/25/11: Pt started his pre transplant w/u locally.

3/21/11: Pt has been contacted and notified that he needs the BM biopsy and his pre-transplant w/u done locally.
Transplant Schedule

Cedars-Sinai Medical Center
Blood and Marrow Transplant Program

Transplant Schedule

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<tr>
<th>Insurance ID: XEE9210254326</th>
<th>Insurance Type: HMO</th>
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<tbody>
<tr>
<td>Insurance: Blue Shield 65+ HMO</td>
<td>Medical Group: Grtr Newport Phys</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ins./Med Grp</th>
<th>Insurance ID</th>
<th>Work-Up Loc</th>
<th>Proc. Status</th>
<th>Start Date</th>
<th>End Date</th>
<th>Auth #</th>
<th>Contact</th>
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<tr>
<td>Grtr Newport Phy</td>
<td>XEE9210254326</td>
<td>In-Network</td>
<td>Denied</td>
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<td>Denied</td>
<td>Dorinda</td>
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<tr>
<td>Contact Type</td>
<td>Case Manager</td>
<td>Contact Phone: 9495744467</td>
<td>Contact Fax: 9495744468</td>
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</table>

Notes: KM 3/17 requesting auth for PreTransplant work-up to be done @ CSMC. MH-3/18, I spoke to dorinda today, she said she received the request from Blue Shield today requesting for auth. She said Grtr Newport is shared risk and they are responsible for pre-tx auth request which must be done through PCP office. She will put in the request and auth and contact pt by Monday 3/21 to schedule him for all tests. I have notified Seda of this as well. Transplant auth would come from Blue Shield a sthey are full risk per Dorinda.

<table>
<thead>
<tr>
<th>Ins./Med Grp</th>
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<td>Blue Shield 65+</td>
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<td></td>
<td></td>
<td>10803365</td>
<td>Stacy N</td>
<td>☑</td>
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</table>

Contact Type: Case Manager | Contact Phone: 9163508658 |

Notes: KM 4/7 requesting auth for Auto Txplnt... 4/8 KM - Per Stacey CM with Blue Shield, this plans follows the Medicare guideline and auth is not really need...Grtr Newport Med Grp is responsible for Professional Fees/ES responsible for Facility Fees, given tracking # only 10803365 no hard copy will be sent out...called Dorinda/Kell at the MED Grp they are still working on their tracking #...4/8 KM - Reovd call from MG - Kristine 949 574 4453...BS will be at full responsibility for transplant...and no other tracking # from medical group is necessary

Transplant (overview):

Date of Transplant: 5/25/2011
CSMC TX No.: 1
Graft Type: Autologous
Graft Subtype: Infusion
Cell Source: PBSC
MD: SL
BMT Coordinator: SG

Disease: multiple Myeloma
Specific Disease: MM: IgG Lambda

Disease Comments: Mr. Doe has had a history of hypercalcemia for several years. He was worked up for hyperparathyroidism. He also has a history of recurrent kidney stones and bladder stones. On a routine KUB he was found to have lytic.
NOTIFICATION - CASE RATE PATIENT - NOTIFICATION

DATE: 26/2014

RE: Mr. John Doe, CSMC MRN: 775463222

Transplant global case rate period of coverage:

To Office Manager,

Mr. John Doe is a patient of the Blood and Marrow Transplant Program under the care of Dr. . This patient may be referred to your office for care. If you choose to participate in this patient’s care, please note that reimbursement is governed by a global case rate contract with Blue Shield 65+ HMO that includes both facility and professional charges for transplant related services. To receive payment for services, please direct your claims to:

Cedars-Sinai Medical Center Patient Financial Services
Attn: Salud Casel, Data Analyst
6500 Wilshire Blvd. 10th floor
Los Angeles, CA 90048

Please notify your billing personnel that all claims should be submitted promptly to ensure more timely reimbursement. As this is a negotiated case rate, please do not directly bill the insurance company or balance bill the patient.

Thank you for your attention to this matter.

Sincerely,

Teresa Devera, Finance Coordinator
Blood and Marrow Transplant Program
Samuel Oschin Comprehensive Cancer Institute
phone: (310) 423-2684, fax: (310) 423-0443
Customizable Dashboard
Customizable Reports

CEDARS-SINAI MEDICAL CENTER
Blood and Marrow Transplant Program

Average Transplant Wait-times

Allogeneic 88.99 73.67 79.13 102.82 113.48 135.61 154.73 122.91 118.21 158.85 136.06 125.06 134.47 115.88 144.78 147.68

Time (days) 0 100 200 300 400 500 600
Advantages

• MDs
  • Overview of plan of action and follow-up notes
  • Comorbidity screening

• RN Coordinators
  • Overview of pre-transplant/transplant information
  • Detailed tracking of transplant notes, donor information, mobilization schedules, work-up reports etc.

• Finance Coordinators
  • Single location for insurance information
  • Auto-generated insurance documents and letters

• Program Administrators
  • Overview of entire patient population
  • Convenient reporting
System Specifications

- Yii/PHP Framework
- MySQL Database
- LAMP/WAMP architecture
- LDAP Based Authentication
- Encryption

System built on standard web platform and meets all HIPAA security rules
Future Enhancements

- Frailty Index
- Double Check: Transplant clearance prior to admission
- Auto-email notifications
- Calendar / Transplant Roadmap
- Connectivity to AGNIS/FormsNet
Acknowledgements

- Michael Lill, MD
- Patricia Van Strien, RN
- Keith Hoshal, RN
- Stephen Lim, MD
- Margarita Guerrero, RN
- Seda Gharapetian, RN
- Mona Homedian
- Lynn Abess, MBA
- Kevin Dudley
- Greg Huang
- Mercedes Franco
- Laura Snoussi, RN
- Carolina Caso, RN
Questions?

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Phone: 310-423-3990