**Institutional Overview: MBBH**
- National referral Hospital, emergency centers and university teaching hospital
- 1,500 beds capacity
- 2,000 outpatient per day
- Over 1000 inpatient beds
- Located in Dar es Salaam city with 8.5 million population

**Team members**
- Name: Peter Mwanga, MD
  - Title: Team Lead
  - Department: Oncology
- Name: Selma Salehina, MD
  - Title: Team Lead
  - Department: Hematology
- Name: Sulaiman Ali, MD
  - Title: Team Lead
  - Department: Infectious Disease
- Name: Agnes Mwa, MD
  - Title: Team Lead

**Problem Statement**

**Baseline**

**Aim Statement**

To reduce the number of patients at MBBH who do not comply with their oral oncology medicine therapy from an average of 13.7 per month to 10 per month by December 2021.

**Process Map**

**Cancer & Effect**

**Phenomenon**

**Diagnosis Data Summary**

**Phenomenon**

**Diagnosis Data**

**Phenomenon**

**Diagnosis Data**

**Countermeasures**

**Countermeasures**

**Sustainability Plan**

**Countermeasures**

**Conclusion**

1. Patient satisfaction improves-with increasing patient adherence to oral medicine therapy
2. Reduces the number of patients who are on oral medicine therapy
3. Reduces the number of patients who are on oral medicine therapy
4. Reduces the number of patients who are on oral medicine therapy
5. Reduces the number of patients who are on oral medicine therapy

**Thank you**
Multiple Myeloma maintenance therapy improvement project

Dr Stella Rwezaula, MD, Clinical Hematologist
Head, Hematology Unit
Muhimbili National Hospital (MNH)

December 10, 2021
Institutional Overview- MNH

- National referral Hospital, research centre and university teaching hospital
- 1,500 bed capacity
- 2000 outpatients per day
- Attending all hematoncology patient
- Located in Dar Es Salaam city with 6 mil. population
### Team members

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Muhoka, MD</td>
<td>Team Lead</td>
<td>Head, Oncology Unit</td>
</tr>
<tr>
<td>Stella Rwezaula, MD</td>
<td>Team Lead</td>
<td>Head, Hematology Unit</td>
</tr>
<tr>
<td>Ramdhani Abdul, RN</td>
<td>Member</td>
<td>Oncology Nurse</td>
</tr>
<tr>
<td>Agness Shayo, MD</td>
<td>Member</td>
<td>Physician</td>
</tr>
</tbody>
</table>
Problem Statement

Between June 2020 – June 2021, an average of 29 patients/ per month stopped their MM treatment; which led to relapse within 1-year (post 1\textsuperscript{st} induction) requiring a second induction and a 50\% MM mortality our hospital.
## Outcome Measure

### Baseline data summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong></td>
<td>Incomplete Multiple Myeloma treatment</td>
</tr>
<tr>
<td><strong>Patient population:</strong> (Exclusions, if any)</td>
<td>All patients diagnosed with Multiple Myeloma at Muhimbili National Hospital who started maintenance treatment.</td>
</tr>
<tr>
<td><strong>Calculation methodology:</strong> (This is a count not a percentage)</td>
<td>Patients who do not complete their Multiple Myeloma Treatment</td>
</tr>
</tbody>
</table>
| **Data source:** | - Hospital files  
- JIVA electronic system |
| **Data collection frequency:** | - Monthly |
| **Data limitations:** (if applicable) | - Poor file documentation  
- Lack patient’s registry |
Outcome Measure
Baseline data

LEARNING:
The data is consistent along the average... which led us to suspect there may be a common root cause to the problem.
Aim Statement

To reduce the number of patients at Muhimbili National Hospital who do not complete their Multiple Myeloma maintenance therapy from an average of 29/ per month to 16 per/ month (50% reduction), by December 2021.
MM patients referred from peripheral hospitals

Patients receive a Diagnosis from Onc. Dept

MM Patients admitted in different departments at MNH

Afford

Yes

No

MM patients admitted at MNH

MM patients attended at MNH OPD

Afford

Yes

No

Palliation (Melphalan + Prednisolone)

Counselling and Induction treatment

Maintenance follow up at Hemato-Oncology clinic at MNH

Day care chemotherapy delivery ward

Remission?

Yes

Treatment adjusted & Pt. continue care

No

PATIENT EXPIRE

No

Yes
A lack of knowledge regarding the disease, particularly during its remission, by both patients and healthcare staff.
### Process Measure

## Diagnostic Data summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong></td>
<td>Patient survey</td>
</tr>
<tr>
<td><strong>Population:</strong></td>
<td>Patients with Multiple Myeloma who dropped out of treatment</td>
</tr>
<tr>
<td><strong>Calculation methodology:</strong></td>
<td>Count</td>
</tr>
<tr>
<td><strong>Data source:</strong></td>
<td>Survey</td>
</tr>
<tr>
<td><strong>Data collection frequency:</strong></td>
<td>Once</td>
</tr>
<tr>
<td><strong>Data limitations:</strong></td>
<td>Small sample (14) &amp; rely on patients as source of truth</td>
</tr>
</tbody>
</table>
Multiple Myeloma Patient Survey Results
“Reasons why they stopped treatment”
(August 2021)

Survey Responses

- "No need to continue treatment"
- Not Afford Treatment
- Changed Physicians
- Transportation issues

Count

Cumulative Responses

n = 14
### Process Measure

#### Diagnostic Data summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure:</td>
<td>Provider survey</td>
</tr>
<tr>
<td>Population:</td>
<td>General Practicians</td>
</tr>
<tr>
<td>(Exclusions, if any)</td>
<td></td>
</tr>
<tr>
<td>Calculation methodology:</td>
<td>Count</td>
</tr>
<tr>
<td>Data source:</td>
<td>Survey</td>
</tr>
<tr>
<td>Data collection frequency:</td>
<td>Once</td>
</tr>
<tr>
<td>Data limitations:</td>
<td>Small sample (5)</td>
</tr>
<tr>
<td>(if applicable)</td>
<td></td>
</tr>
</tbody>
</table>
Provider Survey Results
“Know & Understand Maintenance Protocols”
(August 2021)

Survey Responses

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>4</td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
</tbody>
</table>

n = 5
**Priority / Pay-off Matrix**

**Countermeasures**

<table>
<thead>
<tr>
<th>Ease of Implementation</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Easy</strong></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td>Educate Healthcare providers in the hospital</td>
<td></td>
</tr>
<tr>
<td>Educate Patients &amp; Relatives</td>
<td></td>
</tr>
<tr>
<td>Develop information mtrl for patients &amp; healthcare workers</td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td>Low</td>
</tr>
<tr>
<td>Provide medicine to those who can’t afford</td>
<td></td>
</tr>
<tr>
<td>Educate Healthcare providers in <em>peripheral</em> hospitals</td>
<td></td>
</tr>
</tbody>
</table>

Low Impact: Provide medicine to those who can’t afford.
## Test of Change

### PDSA Plan

<table>
<thead>
<tr>
<th>Date</th>
<th>PDSA Description</th>
<th>Lead</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>29-Oct</td>
<td>Schedule healthcare provider training sessions</td>
<td>Dr. Peter</td>
<td>DONE</td>
</tr>
<tr>
<td>29-Oct</td>
<td>Organize/ schedule a meeting with Administration to discuss providing medicine to those patients who can’t afford their medication</td>
<td>Dr. Stella</td>
<td>DONE</td>
</tr>
<tr>
<td>3-Nov</td>
<td>Develop a training presentation to give to healthcare providers</td>
<td>Dr. Peter</td>
<td>DONE</td>
</tr>
<tr>
<td>3-Nov</td>
<td>Develop brochure / information material for healthcare providers to give to their patients &amp; relatives (during clinical appointments)</td>
<td>Ramadhani</td>
<td>DONE</td>
</tr>
<tr>
<td>✅ 3-Nov</td>
<td>- Conduct three (3) hospital training sessions, to educate healthcare providers on the MM protocols for treating patients.</td>
<td>Team</td>
<td>DONE</td>
</tr>
<tr>
<td>✅ 4-Nov</td>
<td>- During the sessions:</td>
<td>Team</td>
<td></td>
</tr>
<tr>
<td></td>
<td>❖ Speak to the healthcare providers about educating their patients</td>
<td>Team</td>
<td></td>
</tr>
<tr>
<td></td>
<td>❖ Provide healthcare providers brochures / Information to give to their patients</td>
<td>Team</td>
<td></td>
</tr>
<tr>
<td>5-Nov</td>
<td>Meet with administration to discuss providing medicine to patients who can’t afford their medication</td>
<td>Team</td>
<td>DONE</td>
</tr>
<tr>
<td>24-Nov</td>
<td>All providers will start educating patients &amp; relatives (during their appointments)</td>
<td>Providers</td>
<td>IN PROGRESS</td>
</tr>
<tr>
<td>December</td>
<td>Educate Healthcare providers in <strong>peripheral</strong> hospitals</td>
<td>Team</td>
<td>IN PROGRESS</td>
</tr>
</tbody>
</table>
MULTIPLE MYELOMA: PATIENT EDUCATION

What is Multiple Myeloma

Myeloma is a type of cancer that develops from cells in the bone marrow called plasma cells.

Bone marrow is the spongy tissue found inside the inner part of some of our large bones.

Symptoms of Multiple Myeloma

Myeloma does not always cause symptoms in its early stages, and might be picked up on a routine blood test.

The main symptoms include bone pain in the back, hips and ribs, recurrent fever, gum bleeding, tiredness, dizziness and headaches.

Risk and causes

We don’t know what causes most cases of myeloma but there are some known risk factors. Even if you have one or more risk factors, it does not mean that you will definitely get myeloma.

Associated risk factors include age, obesity, family history, gender, autoimmune conditions, occupations eg. mining industries, painting, benzene exposure.

Diagnoses

Blood and imaging tests

- Peripheral blood smear
- Bone marrow aspiration and biopsy
- Urine for Bence Jones protein
- Skeletal survey

Treatment

The main treatment includes

- Combination chemotherapy
- Steroids
- Bone marrow transplant
- Radiotherapy treatment
Outcome Measure

Post Countermeasure

Summary

Decline in number of pts dropping from treatment due to a combination of:

1. Provider Education
2. Patient Education
3. **New** Bone marrow transplant program
## Next steps

**Sustainability Plan**

<table>
<thead>
<tr>
<th>Item</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue with regular Physician education</td>
<td>Team and the hospital management</td>
</tr>
<tr>
<td>Expand patient education to include all clinics to</td>
<td>Team and hospital management</td>
</tr>
<tr>
<td>• Provide all pts with information</td>
<td></td>
</tr>
<tr>
<td>• Better aware of the impact of stopping their treatment</td>
<td></td>
</tr>
<tr>
<td>Provide proper medications to patients for the treatment of MM</td>
<td>Hospital management</td>
</tr>
<tr>
<td>Continue the Bone Marrow transplant program</td>
<td>Hospital</td>
</tr>
</tbody>
</table>
Conclusion

1. Due to improved diagnostic instruments and an increase in clinical personnel, the number of patients diagnosed with multiple myeloma is increasing.

2. However, a significant number of patients diagnosed with multiple myeloma experience poor clinical outcomes.
   - The main factor contributing to the poor treatment outcome among these patients was patient drop out from the treatment.

3. Our focus was to improve the knowledge of the disease and its presenting issues, treatment and outcome among the health care workers.
   - We recognize that successful patient treatment requires teamwork among health care givers.
   - Clinical providers must have a common understanding of how to operate and they need to share knowledge.
   - Patient and their relatives must possess enough knowledge on their condition to remain in treatment therapy.

4. This will increase patient compliance on their treatment plan and reduce the number of treatment drop out, resulting in improved clinical outcomes for patients diagnosed with multiple myeloma.
Thank you