The effectiveness of an enhancement program on management of febrile neutropenia in haematology patients to reduce unplanned emergency hospital admission

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Neutropenic sepsis is a potential fatal Haematological emergency in patients with:

- Marrow failure either primary or secondary to disease progression
- Immunosuppressant therapy
- Cytotoxic chemotherapy
- Haemopoietic stem cell transplantation
Prompt management is essential in life-saving and can prevent irreversible outcome through a structured and readily accessible service.
Problem Identified

- Lack of communication and coordination
- Lack of ad-hoc accessible services
- Lack of management system for the patients
- Lack of staff awareness
- Lack of carer’s awareness
An enhancement program was developed in 1Q2012 which aims to:

- Reduce unplanned hospital admission through Accident & Emergency Department (AED)
- Provide preventive measures through patient education and assessment
- Provide immediate intervention and advice through telephone help line in the Nurse-led clinic
The enhancement program applies to discharge patients with:
1. Post chemotherapy
2. Neutropenia – related to Haematological disease
3. Post Haemopoietic Stem Cell Transplantation
METHOD

- Enhance in-service training
- Patient education
- Nursing Assessment upon discharge
- Accessible service – Nurse-led clinic / Haematology day ward & AEDs – Guideline on Management of Neutropenic sepsis
- Reengineering team work
Outcome Measures

Post 12 months’ implementation review on:
1. The number of unplanned admission through AED
2. The effectiveness on patient education and nursing assessment by the number of calls to help-line
CLINICAL PATHWAY FOR MANAGEMENT ON PATIENT WITH FEBRILE NEUTROPENIA TO DISCHARGED PATIENTS
Clinical Pathway for Management of Febrile Neutropenia – Discharged Patient

- **Patient education**
  1. Post chemotherapy complication education before 1st administration
  2. Prevention of infection education upon discharge

- **Nursing Assessment**
  - Patient Competency on self awareness & Discharge Care Plan

- **Accessible Emergency Service After Discharge**
  - Office Hours: 09:00 – 18:00
    1. Haematology Service Help Line – Nurse-led Clinic
    2. Day Ward fast tract service
  - Non-Office Hours – AED service
    1. Alert Card
    2. Fast Tract AED Management – work up & antibiotics
    3. Admission to medical ward
Education Pamphlets
Patient Home Care Empowerment Score & Discharge Care Plan
病人須知
如有以下情況
可致電本院血液科熱線
或
盡快前往就近急症室求診

瑪嘉烈醫院
血液科熱線電話:
2742 9121

辦公時間:
星期一至五
上午九時
至
下午六時

非辦公時間:
請即前往
就近急症室
求診，
並出示此警示咭

發燒
（攝氏38度或100.4華氏度以上）
・感染症狀例如: 嚴重咳嗽、喉痛、
呼吸困難、暈眩、發冷及顫抖等
・昏睡、甚至神智混亂
・皮下出血或皮膚出現瘀斑
・嚴重嘔吐或腹瀉
・導管發炎症狀

瑪嘉烈醫院血液科
低血球症
病人警示卡
# Outcomes Before and After the Program

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<thead>
<tr>
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<th>Before</th>
<th>After</th>
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<tbody>
<tr>
<td>Patient Education</td>
<td>By Nurse - specialist when available</td>
<td>Pre-chemotherapy education, education on discharge, continuous review by ward / day ward Haematology nurses</td>
</tr>
<tr>
<td>Nursing Assessment</td>
<td>By Nurse- specialist when available</td>
<td>Chemotherapy home care competency assessment upon discharge by nurses working in Haematology ward or day ward</td>
</tr>
<tr>
<td>Alert Card</td>
<td>NIL</td>
<td>Available</td>
</tr>
<tr>
<td>Help Line</td>
<td>NIL</td>
<td>122 calls</td>
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<tr>
<td>No. of admission through AED (Neutropenic related)</td>
<td>67</td>
<td>38</td>
</tr>
<tr>
<td>Triage as clinical admission</td>
<td>16</td>
<td>69 (56% of all calls)</td>
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Direct admission for work up and management
What the Help-line calls reflects??

1. Patient understand the importance on self awareness

2. Trust & rapport has been
What happens to those patients finally admitted for Febrile Neutropenia without calling??

Patient not compliance to advice….

Emergency during non-office hour

Too ill to call – strictly go to A&E by ambulance
OVERALL RESULTS

- Life saving
- Increase patient self-awareness
- Enhanced accessible service during emergency
- Provided efficient patient management
- Reducing cost - given the cost of each AED admission of HK$2659 x 69 cases triage as clinical admission = $183,471
Nursing Perspectives:

Enhanced a systemic management and continuity of care to patients
Enrich and promote team work
Job satisfaction – increase autonomy in patient management by standing protocol in the Nurse-led clinic
Modernizing care delivery model – case management and coordination role
Future Enhancement

1. Extended to in-patient program on timely management of febrile neutropenia
2. Review on effectiveness of the help-line and the time from work up to antibiotics (door to needle)
3. Enhancement on nursing skill on help-line enquiry by developing an assessment checklist
Acknowledgment:

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- Haematologists PMH