Background
Recently, there has been an increasing trend of Khoo Teck Puat Hospital (KTPH) inpatient referrals for podiatry services for conditions that may be managed in the outpatient setting. Additionally, these patients typically have a short length of stay (LOS). The benefits treatment in the inpatient setting may be negated by the laborious administrative processes in admitting and discharging patients. To prevent such scenarios, a targeted approach was employed to intervene upstream by providing podiatry input prior to decision for admission for such patients.

**Aim:** To enable patient to early access to podiatry services in KTPH A&E; to promote care by podiatrist in the KTPH outpatient setting rather than admission to inpatients.

Methodology

| Trend of referrals for conditions that can be managed as outpatients seen in podiatry inpatient referrals reviewed | Liaised with inpatient ops to collect data on cases with LOS <2 and conditions that can be managed as outpatients |
| Perform 2nd PDCA & feasibility study with data from A&E for possible provision of podiatry services in A&E | Estimated of 290 patients (per year) could be managed outpatients instead of inpatients. |
| Started discussion with A&E team on possible provision of podiatry services in A&E; agreed to review retrospective data | Agreed on possible conditions podiatrists can see in A&E in feasibility study (E.g.: ingrown toenails, verruca & calluses etc.) |
| Team agreed to pilot on-call podiatry services in A&E for agreed conditions in Feb 2017 | Estimated 122 patients (per year) could have benefited if podiatry services was available in A&E |
| Agreed to establish proper workflow and protocol in P3 to disseminate to A&E Drs with agreed criteria for referrals | Doctor’s script, charge codes, patient consent forms, workflow created. Logistics for seeing patients arranged |
| Full roll-out of pilot on-call podiatry services on 1st Oct 2017 | Expanded scope of podiatry to emergency observation unit for complicated cases & those requiring IV antibiotics |

The team performed 3 PDCA cycles before the full roll-out of the initiative in A&E. Both teams have been fully briefed about the workflow & criteria for referral in both P3 (A&E Clinic) and EDTU (Emergency Observation Unit).

Results & Project Impact

Between Oct 17’ to Oct 18’, a total of 36 patients were referred to podiatry. Chart below showed the number of patients (%) who have avoided admission due to this new collaboration.

<table>
<thead>
<tr>
<th>No. of Inpatients beds saved with collaboration</th>
<th>Result</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;E Clinic</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Emergency Observation Unit</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>% avoided admission</td>
<td>40%</td>
<td>40%</td>
</tr>
</tbody>
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### Expended podiatry services at A&E

**Before:**
- A&E → Ortho (4 weeks)
- Ortho → Pod (8 weeks)
- Total = 12 weeks (84 days)

**After:** Immediate treatment

**Safer:** Reduced re-admission to A&E Clinic

**Better:** Previously these patients would have been admitted for treatment

**Cheaper:**
- Each bed day = $650
- Annual savings = $20,800

**Manpower savings**

- 65 mins spent per referral by Contact Centre, A&E PSA, SOC Dr, SOC PSA
- Cheaper: 23 P3 cases x 65 mins = 25 hrs per year
- $0.01 FTE = $650

**Reduction in readmission to A&E Clinic**

- 0 cases returned to ED within 1 month for the same diagnosis (0% vs 3.5%)
- Safer: Definite care plan for patients; reduce need to return to A&E

**Reduction in readmission to EDTU**

- 0 cases returned to ED within 1 month for the same diagnosis in EDTU
- Better: Previously these patients would have been admitted for treatment

### Sustainability, follow-up & conclusion

This is the first documented successful collaboration between KTPH Podiatry and A&E Department in Singapore. Combination of appropriate expedited medical and podiatry management: provides cost-effective, holistic care and definite plans for patients, without needing inpatient admission in most cases. Appropriate & direct outpatient appointments, can also be arranged with input from both podiatrists and doctors after treatment in A&E. Bed-days have been saved due to avoidance of admissions and reduce re-admittance to A&E through immediate podiatry assessment and intervention at A&E. Through this collaborative effort, the team has helped deliver an annual savings of $21,450 and improved access of care for patients via this seamless service. There is a potential for greater savings to be attained with more referrals to this service.

Future goals to improve overall referral rates have also been made via roll-calls and department meetings. Additionally, there are vast opportunities for expansion of this collaboration to include patients who sustain acute injuries, chronic conditions & sports-related conditions who present at A&E.