StepAhead Program Reduces Lower Limb Amputation Rates Among Diabetic ESRD Patients

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Results

Among StepAhead participants mean age was 63.3 years, 45.5% were female, 45.4% were black, 42.7% were Hispanic. 80% had Medicare as a primary insurer, and diabetes was the main cause of ESRD (70.7%) (Table 1).

Table 1. Baseline Comparisons of StepAhead Participants and Control Patients

<table>
<thead>
<tr>
<th>Control (N = 447)</th>
<th>StepAhead Participants (N = 447)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years (mean)</td>
<td>63.1±12.7</td>
<td>63.0±12.3</td>
</tr>
<tr>
<td>Male, %</td>
<td>54.5</td>
<td>54.9</td>
</tr>
<tr>
<td>Female, %</td>
<td>45.5</td>
<td>45.1</td>
</tr>
<tr>
<td>African-American, %</td>
<td>45.4</td>
<td>42.7</td>
</tr>
<tr>
<td>Hispanic, %</td>
<td>26.2</td>
<td>29.7</td>
</tr>
<tr>
<td>White, %</td>
<td>28.2</td>
<td>27.6</td>
</tr>
<tr>
<td>Other, %</td>
<td>6.0</td>
<td>5.7</td>
</tr>
<tr>
<td>Unknown, %</td>
<td>2.3</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Objective

We examined whether implementation of the 4 StepAhead educational and treatment initiatives was effective in reducing lower limb amputations among diabetic ESRD patients.

Methods

The StepAhead program was initiated at 10 large dialysis organizations (LDO) clinics on 10 February 2012. All ESRD patients with diabetes who received dialysis treatment at 1 of these clinics were eligible for analysis.

Patients were studied beginning at the time of enrollment in StepAhead and followed for 18 months. Patients were censored for StepAhead disenrollment, death, transfer of care away from the LDO, or discontinuation of dialysis.

For StepAhead participants, amputation information was entered by staff into their electronic health records when such an amputation occurred during the study.

• Among the 18-month StepAhead participants (n = 229), 66.2% had 16/19 foot checks during follow-up (Table 2).
• During the 18 months of StepAhead, 11 program participants (2.2 patients amputated per 100 patient-years) underwent a total of 12 amputations (2.4 amputations per 100 patient-years).
• In the final 12 months of the program, rates of amputation were 2.5 patients per 100 patient-years and 2.7 amputations per 100 patient-years (Table 3).
• StepAhead participants had a history of diabetes for an average of 12.0±9.5 years, and 1.6 amputations per 100 patient-years, respectively.
• Amputation rates for StepAhead participants were lower than those found in the literature (Figure 1).

Introduction

• End-stage renal disease (ESRD) patients with diabetes are at high risk of lower limb amputations. Published data have found rates of 2.5 to 13.8 amputations per 100 patient-years.1,2

• StepAhead was an integrated diabetes mellitus care management program designed to enhance patient self-management and reduce the likelihood of unnecessary complications among diabetic ESRD patients.

The StepAhead program had 4 goals:

• Improve rates of ESRD patients having physician-managed diabetes care.
• Ensure patients underwent a yearly eye examination to minimize diabetes-related eye problems and blindness.
• Educate patients regarding glucosel management including verification of a working glucometer.
• Educate patients on the need for daily self-foot checks and verify monthly in-center foot examinations to identify lower limb ulcerations and infections.

Conclusions

• Versus published normative data, rates of lower limb amputation among StepAhead enrollees was lower.

• In addition, improvement in amputation rates over time suggests that the full potential of the program in amputation avoidance may take time to be achieved and may not yet have been fully realized at the conclusion of the 18-month pilot.

Acknowledgements


References


