1st Place: Development of a Feasibility Study of Tele-Education for Ensuring Correct Bronchodilator Use

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Development of a Feasibility Study of Tele-Education for Ensuring Correct Bronchodilator Use

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Background

- 40-80% of information provided by health care providers is forgotten immediately
- 50% of information provided by health care providers is recalled incorrectly
- Maximum amount of correct information retained by patients is 20-40%
- 25% of patients never receive any instruction on the proper technique for inhaler use
- 92% of patients using Dry Powder Inhalers do not utilize proper technique

Objectives

- Identify 10-12 pulmonary outpatients prescribed a new bronchodilator
- Create a home-based pilot study that allows the implementation of a tele-education visit for the first time at home of a new bronchodilator using LVHN’s Video Visit platform
- Enhance the education of patients on the appropriate technique for using inhalated bronchodilators
- Demonstrate the success of video visit technology and the potential effects on healthcare

Methods

Figure 1. Workflow for Bronchodilator Tele-Education Pilot Study

- Provider prescribes a new bronchodilator during office visit
- Telepharmacy nucleates
- If eligible in visiting a patient in a timely manner, LPN provides initial education on bronchodilator use and assesses patient’s eligibility for program
- LPN provides initial education on bronchodilator use and assesses patient’s eligibility for program
- Patient education nurse contacts the patient’s mail contact information, including any additional needs
- Patient sets up or tests message with video conference link and digital TakTouch interaction at level of comfort
- Patient clicks on test message with video conference link and digital TakTouch interaction at level of comfort
- Patient uses correct inhaler technique during telemedicine training and counseling after hospitalization in patients with severe chronic obstructive pulmonary disease
- Patient uses correct inhaler technique during telemedicine training and counseling after hospitalization in patients with severe chronic obstructive pulmonary disease
- Tele-education can be a beneficial and feasible option for a widespread range of patients
- Average amount of time required to complete entire encounter was 19 minutes
- Patients responded best to text message reminder and text message provided link
- Patient education materials should be remodeled to be more direct
- 100% of patients found that tele-education increased their confidence in using their bronchodilator

Results

Table 1. Patient Demographics and Baseline Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total Patients</th>
<th>Eligible Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (m/f)</td>
<td>18/15</td>
<td>15/15</td>
</tr>
<tr>
<td>Men (m%)</td>
<td>8 (73%)</td>
<td>3 (50%)</td>
</tr>
<tr>
<td>Women (f%)</td>
<td>3 (27%)</td>
<td>3 (50%)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>68</td>
<td>63</td>
</tr>
<tr>
<td>Range</td>
<td>45-88</td>
<td>45-84</td>
</tr>
<tr>
<td>Prior bronchodilator experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (%)</td>
<td>73%</td>
<td>83%</td>
</tr>
<tr>
<td>Access to required technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (%)</td>
<td>82%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Figure 2. Time Required to Complete Bronchodilator Tele-Education Encounter

- Patient 1
  - 10 minutes to complete education
  - 20% of information provided by health care providers is forgotten

- Patient 2
  - X minutes to complete education
  - 40% of information provided by health care providers is forgotten

- Patient 3
  - X minutes to complete education
  - 60% of information provided by health care providers is forgotten

- Patient 4
  - X minutes to complete education
  - 80% of information provided by health care providers is forgotten

- Patient 5
  - N/A³
  - 40% of information provided by health care providers is forgotten

- Patient 6
  - N/A³
  - 40% of information provided by health care providers is forgotten

Table 2. Success of Tele-education on Patient Bronchodilator Technique

<table>
<thead>
<tr>
<th>Patient</th>
<th>Patient stated additional education helped instructed bronchodilator technique</th>
<th>Patient had additional education (LPN)</th>
<th>Required and LPA information was beneficial for patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient 1</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Patient 2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Patient 3</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Patient 4</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Patient 5</td>
<td>N/A³</td>
<td>N/A³</td>
<td>N/A³</td>
</tr>
<tr>
<td>Patient 6</td>
<td>N/A³</td>
<td>N/A³</td>
<td>N/A³</td>
</tr>
</tbody>
</table>

Table 3. Success of Video Visit Platform

<table>
<thead>
<tr>
<th>Patient</th>
<th>Patient used LPA to connect to LVHN again</th>
<th>Required and LPA information was beneficial for patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient 1</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Patient 2</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Patient 3</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Patient 4</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Patient 5</td>
<td>N/A³</td>
<td>N/A³</td>
</tr>
<tr>
<td>Patient 6</td>
<td>N/A³</td>
<td>N/A³</td>
</tr>
</tbody>
</table>

Future Directions

- Follow up with patients 1-4 in 6 months
- Modify technology to allow automated text message reminder
- Reduce connection time
- Test program with cohort of patients with older median age
- Expand program to other departments

References


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