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**Research Scholars Poster Presentation** 

#### 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**

## 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 at home use of a new bronchodilator using LVHN's Video Visit platform
- Enhance the education of patients on the appropriate technique for using inhaled bronchodilators
- Demonstrate the success of video visit technology and the potential effects on healthcare

## **Methods**

**Figure 1. Workflow for Bronchodilator Tele-Education Pilot Study** 

	•				
LPN provides initial e	education on bronchodil	ator use and assesses patient's	s eligibility for progra	n 📰 Patient eligibilit	
	•				
If patient is willing to patient about e-mail visit); assists patient	participate in program: I or text message provided with downloading mobil	LPN provides handout about te d link for video conference (wit le app for phone (if applicable)	echnology; informs hin 24 hours from init	ial Patient educ	
				LPN sends	
LPN e-mails research family members' con	n scholar the patient's e- tact information	mail contact information, inclu	ding any additional	preferred ti conference	
-	*				
Patient gets e-mail or calendar invitation (w	text message with video ithin 24 hours of initial v	o conference link and digital risit)			
60	•		*		
Requirement: Prescription for bronchodilator has been filled and patient has	tion with option to download the Vidyo® app if not previously installed—and		LPN and research scheduled time for	PN and research scholar join call at cheduled time for video conference	
Patient uses 1st of 2 i	on MDI staff education of	lator use prior to further educa	tion; LPN assesses le	vel of	
Correct usage based	education on correct usa	age regardless of assessment;	no puffs used by pati	ent	
Correct usage based of LPN provides further Post education, patie education protocol	education on correct usa	age regardless of assessment; demo bronchodilator use; LPN	no puffs used by pati assesses level of co	ent rrect usage based on M	
Correct usage based of LPN provides further Post education, patie education protocol	education on correct usa t nt uses 2nd of 2 puffs to	age regardless of assessment; demo bronchodilator use; LPN	no puffs used by pati assesses level of co	ent rrect usage based on M	
Correct usage based of LPN provides further Post education, paties education protocol	education on correct usa nt uses 2nd of 2 puffs to asks patient if they have	age regardless of assessment; demo bronchodilator use; LPN	no puffs used by pati assesses level of co If incorrect usage:	ent rrect usage based on M LPN provides addition	
correct usage based of LPN provides further Post education, paties education protocol	education on correct usa nt uses 2nd of 2 puffs to asks patient if they have	age regardless of assessment; demo bronchodilator use; LPN	no puffs used by pati assesses level of co If incorrect usage:	ent rrect usage based on M LPN provides addition	
LPN provides further Post education, patie education protocol If correct usage: LPN LPN or research scho of post education tele 24–48 hours; call end	education on correct usa education on correct usa nt uses 2nd of 2 puffs to asks patient if they have lar notifies patient phone survey in s	age regardless of assessment; demo bronchodilator use; LPN any additional questions	no puffs used by pati assesses level of co If incorrect usage:	ent rrect usage based on M LPN provides addition 24–48 hours post cal scholar asks patient survey questions	
LPN provides further Post education, patie education protocol If correct usage: LPN LPN or research scho of post education tele 24–48 hours; call end	education on correct usa asks patient if they have lar notifies patient phone survey in s 18 Lehich	age regardless of assessment; demo bronchodilator use; LPN e any additional questions Immediately following th research scholar asks L survey questions	no puffs used by pati I assesses level of co If incorrect usage: Network	ent rrect usage based on M LPN provides addition 24–48 hours post cal scholar asks patient survey questions	

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## Results



gibility checklist

education materials

sends research scholar erred time for video

Staff Education On Use of MDI



Table 1. I attent Demographics and Dasenne Characteristics				
Characteristic	<b>Total Patients</b>	Eligible Patient		
Sex (n/%)				
Men	8 (73%)	3 (50%)		
Women	3 (27%)	3 (50%)		
Age (years)				
Median	68	63		
Range	45-88	45-84		
Prior bronchodilator experience				
Number (%)	73%	83%		
Access to required technology				
Number (%)	82%	100%		



### **Table 2. Success of Tele-education on Patient Bronchodilator**

Technique						
	Patient used medicine correctly prior to tele-education	Patient used medicine correctly after tele-education	Patient had increased confidence in bronchodilator use post-education	Patient stated additional education helped him/her understand when and how to use the medicine	Patient had additional questions for the LPN	LPN determined tele-health encounter was beneficial for patient
Patient 1		X	X	X	Х	X
Patient 2	Χ	N/A <sup>1</sup>	Χ	Χ	Х	Х
Patient 3	X	Х	X	Χ		Χ
Patient 4	X	X	X	X		X
Patient 5	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>
Patient 6	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>

<sup>1</sup> was only prescribed 1 puff of medication

<sup>2</sup> did not complete tele-education

Table 3. Success of Video Visit Platform					
	Successful connection to pulmonary educator (LPN)	Successful completion of tele-education	Found technology easy to use	Would use the technology to connect to LVHN again	
Patient 1	Χ	Х	Х	Х	
Patient 2	X	Х	Х	Х	
Patient 3	Х	Х	Х	X	
Patient 4	Х	Х	Х	Х	
Patient 5			N/A <sup>1</sup>	N/A <sup>1</sup>	
Patient 6			N/A <sup>1</sup>	N/A <sup>1</sup>	

<sup>1</sup> did not complete patient survey

## Table 1 Patient Demographics and Receline Characteristics

## **Figure 2. Time Required to Complete Bronchodilator Tele-**

4	5	6	
ter			
Total time require	d		

- 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

- Follow up with patients 1-4 in 4-6 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

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## Conclusions

## **Future Directions**

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