

# Cost and Time Effectiveness of Telemedicine to Deliver Collaborative Hemophilia Treatment Centers (HTC) Services to Remote Patients

<sup>1</sup> Margaret Hall, FNP-BC ; <sup>1</sup> Stephanie Roessler, Research Coordinator; <sup>1</sup> David Rushlow, LMSW; <sup>1</sup> Susan Wischman, Data Manager; <sup>2</sup> Indryas Woldie, MD; <sup>3</sup> Roshni Kulkarni, MD; <sup>1</sup> Michelle Witkop, DNP, FNP-BC  
<sup>1</sup> Northern Regional Bleeding Disorders Center at Munson Medical Center, Traverse City, Michigan, USA <sup>2</sup> Barbara Ann Karmanos Cancer Center, Detroit, Michigan, USA <sup>3</sup> Michigan State University Bleeding and Thrombosis Center, East Lansing, Michigan, USA



## Background

Through collaborative agreements with physicians and the use of telemedicine at the Northern Regional Bleeding Disorders Center (NRBDC) in northern Michigan, nurse practitioners (NP) have led the Hemophilia Treatment Center (HTC) model of health care delivery. NRBDC provides services to >220 pediatric and adult bleeding disorder patients covering a geographic area of >11,000 square miles.

Telemedicine was introduced in 2010, accessing HTC hematologists at distant sites. Presented are metrics of the telemedicine program including:

- Patient demographics
- Description of miles traveled and saved by the patient
- Patient/provider satisfaction scores

## Objective

To demonstrate the sustained financial and time savings by utilizing telemedicine to provide patient care and the collaboration among the various HTCs.

## Methods

Pediatric and adult patients seen via telemedicine in collaboration with distant hematologist and HTC NP during three years (2013 - 2015) completed a patient satisfaction survey evaluating patient satisfaction and estimated time saved by participating in telemedicine. Distances traveled, and saved, were calculated. Participating providers were queried on their satisfaction.

## Results

Seventy-eight patients (12 pediatric and 66 adult) utilized telemedicine between 2013 - 2015. Ages ranged from 10 months to 88 years. Patients traveled 3,893 km for telemedicine, saving a cumulative total of 49,136 km. Fourteen, 40-hour work weeks were saved over three years by not traveling to a distant site (49,136 km/88 km/h = 558 hours/40-hour work week= 14 weeks). Fuel savings is approximately \$4,000. (49,136 km/10 L/100km = 4914 km x \$0.85 = \$4,177)

Patients either agreed or strongly agreed in all areas of the satisfaction survey:

- Could clearly visualize and hear the distant provider
- Knew what to expect and felt comfortable discussing issues
- Felt their questions were answered
- Privacy was respected
- Able to see specialist sooner than if they had traveled to the distant site
- Would recommend telemedicine
- Quality of their medical care met their expectations

Providers expressed satisfaction with telemedicine.

## Conclusion

Our study highlights the successful collaborative efforts of pediatric, adult, and NP-led HTC to deliver family centered, high quality care using telemedicine. Telemedicine provides increased access to subspecialized care for high risk population patients in geographically challenged areas, while saving significant time and travel miles via this collaborative model of care with various providers.

## 2013 - 2015

**78**  
PATIENTS  
12 Pediatric  
66 Adult

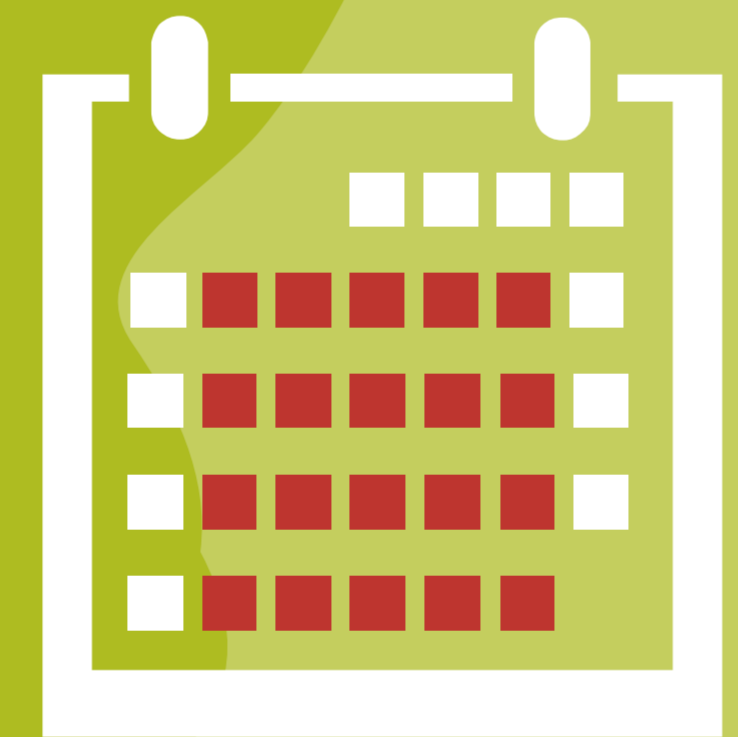


Seventy-eight patients utilized telemedicine. Ages ranged from 10 months to 88 years.



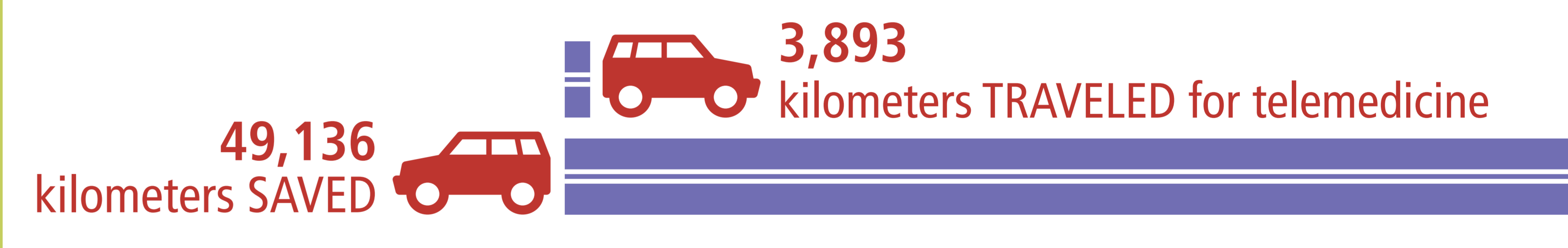
**558**  
HOURS

Saved by not traveling to a distant site



**14**

**40 HOUR**  
**WORK WEEKS**



**FUEL SAVINGS**

## PATIENTS AGREED OR STRONGLY AGREED:

- ✓ Could clearly visualize and hear the distant provider
- ✓ Knew what to expect and felt comfortable discussing issues
- ✓ Felt their questions were answered
- ✓ Privacy was respected
- ✓ Able to see specialist sooner than if they had traveled to the distant site
- ✓ Would recommend telemedicine
- ✓ Quality of their medical care met their expectations



Providers expressed satisfaction with telemedicine.

