

Comprehensive Care Delivery for Bleeding/ Blood Disorders Through Telemedicine (TM) With a Variety of Providers at Multiple Delivery Sites

Roshni Kulkarni¹, Aghiad Chamdin¹, Laura Carlson¹, Rebecca A Malouin¹, Marcia L Bird¹, Colleen Vallad-Hix², Michelle L Witkop³, Ajovi Scott-Emuakpor¹, Renuka Gera¹, Steve Gualdoni⁴, Santosh Hanmod¹, Elizabeth Schroeder⁵

¹Michigan State University East Lansing, MI, ²Upper Great Lakes Family Health Center, Hancock, MI; ³Northern Regional Bleeding Disorder Center, Traverse City, MI; ⁴UP Health System – Marquette, Marquette, MI ⁵Michigan Wisconsin Family Practice, Iron Mountain, MI

MICHIGAN STATE UNIVERSITY College of Human Medicine

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Introductions and Objectives

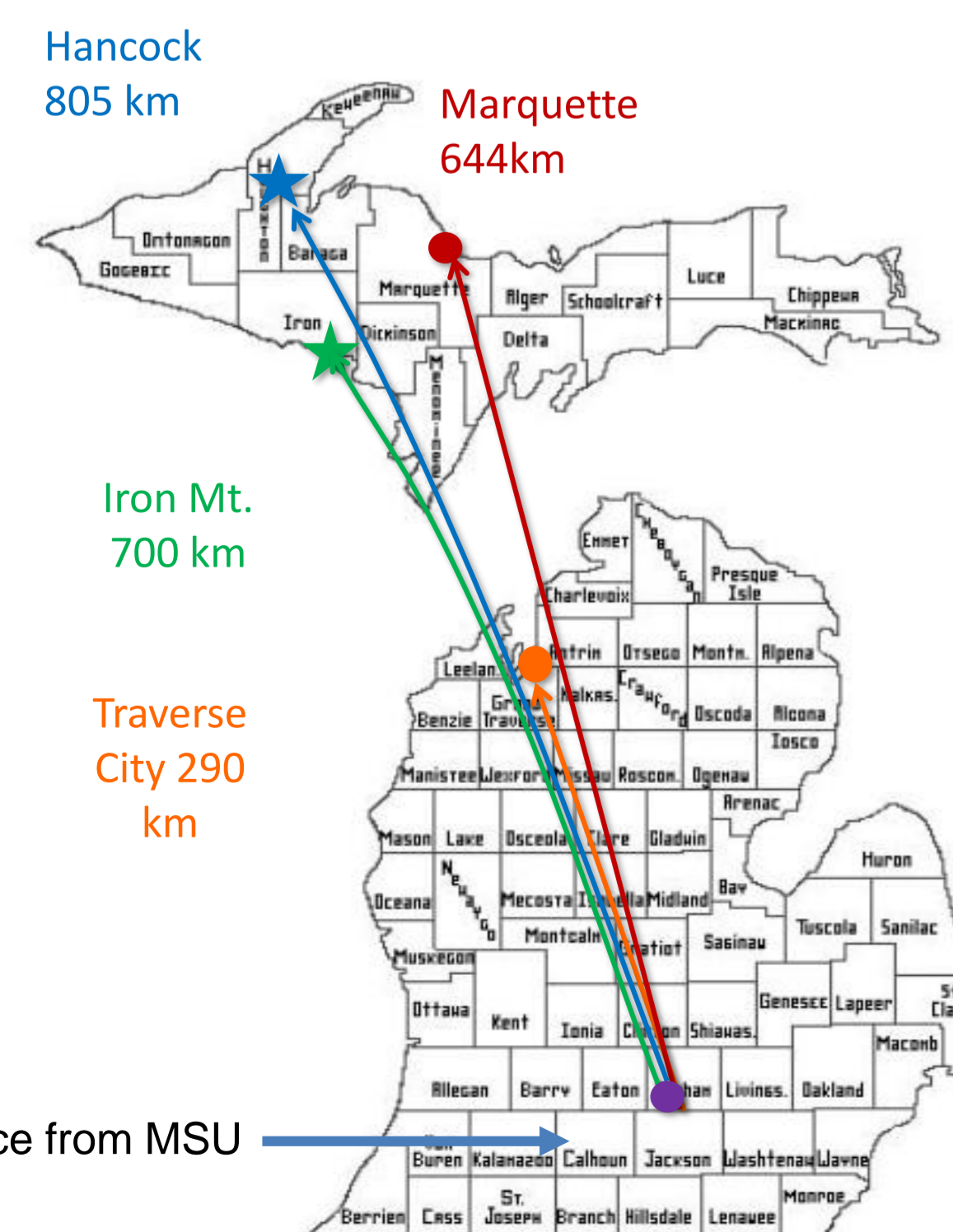
- Telemedicine (TM) is the delivery of health services through HIPAA secure synchronous videoconferencing to patients at remote sites with limited access to specialist services.
- Telemedicine may deliver cost effective diagnostic and comprehensive services for patients with hemostatic and blood disorders.
- Our goals were to provide increase access to family-centered and culturally competent specialty care.
- Increase the number of patients with bleeding/blood disorders that are timely and accurately diagnosed and referred for specialty care.

Objectives

- To assess feasibility of telemedicine between specialists and medical home for children with hemostatic disorders.
- To assess the cost of telemedicine visits versus traditional visits.
- To assess the acceptability by patients/families, and health care providers.
- To assess resource, referral, support assistance and patient confidentiality of medical and mental health services.

Methods/Clinic Locations (Map)

- TM sites in Michigan served by the Michigan State University Center for Bleeding and Clotting Disorders (MSU-CBCD).
- Types of comprehensive team services provided were recorded.
- Personnel, equipment type and as well as the cost savings of travel by the care team were recorded. Written photo release obtained.
- Synchronous HIPAA regulated bidirectional web based videoconferencing technologies, Vidyo™, Polycom™, and Zoom™ were utilized.



Result: Challenges

- Technology challenges :Bandwidth, firewalls
- Lack of proper cameras and computers.
- Clinic cancellations – due to meetings or patient no-shows
- Laboratory challenges: Inability to do on site coagulation test and platelet function testing (platelet aggregation). Specimens needed to be transported to distant labs.
- Increased physician and team time to see few patients

Results: Characteristics and Patient Costs

	Telemedicine Clinic Sites			
	Marquette Gen Hospital	Traverse City	Hancock	Iron Mountain
Time period	1998–2015	2011–2015	2014-2015	2013-2015
TM Reason	Inclement weather, outreach +TM	Relocated Patients	NHPCC grant; Patient need	Patient need
System used	Polycom	Polycom/Vidyo	Vidyo/Zoom	Vidyo/ Zoom
Provider	Physician Assistant	Nurse Practitioner (NP)	Pediatrician	Family practitioner
MSU team	Physician (MD), Social Worker (SW), & Nurse	MD & Nurse	MD, SW, Nurse	MD, SW, Nurse
Comp team	Physical therapist, Genetics counselor	NP, SW	None	None Health Dept.

Travel	Costs	Marquette & Iron Mt.	Traverse City	Hancock
To MSU,	Driving cost	\$1143	\$579	\$1275
	Flying costs	\$1668	\$1405	\$1887
To local clinic	Driving	\$15-117	\$47	\$40

Social Work Role and perspective

- SW built rapport with patients, family members and remote professionals.
- Assisted with insurance coverage, disability applications, and patient assistance programs.
- Facilitated and scheduled patient/family education and support services.
- Provided mental health, dental, and bleeding disorder services and referrals.
- Private SW conferencing room was critical for participant psycho-social confidentiality.

Evaluation of Telemedicine Clinics

- TM benefited patients for initial diagnostic, lab testing, education and follow-up consultation.
- Protocols for TM referrals, visits, and follow-up by CBCD staff.
- Lessons learned from patients/family members:
 - -CBCD and remote staff need to explain purpose and expectations of TM.
 - Provider at remote site improved patient comfort and understanding during TM visit.

Conclusion

- TM allows care delivery by specialists for diagnosis, monitoring and follow up of remote patients as well as critical social worker and nursing evaluation and interventions.
- There is significant cost and time savings for the patients and providers. Besides patient satisfaction and education of patients and providers, TM allows state of the art specialized care to be provided to remote patients.

Results: Demographics and Types of Disorders

Telemedicine Clinics: Michigan		Types of Disorders	No (%)	Family members tested/counseled
Time period	1998 – May 2016			
TM sites	Medical home (2), Specialty Clinics (2) Health Dept. (1)	Hemophilia A or B	6 (9)	Parents, Siblings & Uncles
Patient travel to local clinic	35 miles (1-174 miles)	von Willebrand Disease	12 (17.9)	Parents, Sibling, Grandparents
Patient travel to MSU (one way)	480 miles (92-515)	Bleeding Disorders	22 (32.8)	Family
No. of patients	67 Unique patients	Blood Disorders	16 (23.9)	Family
Telemedicine visits	89 Visits	Thrombophilia	4 (6)	Family
Age range	2 weeks -21 years	Oncology	7 (10.4)	Family
No. of Clinics	1-3 per month			
No of patients seen/clinic	1-3			

Outreach Nurse/ Coordinator Roles

- Scheduled visit, coordinated with providers, information technology, gathered & reviewed referral/patient information (laboratory & pertinent history), ordered required testing prior to visits. Assisted with scheduling visits. Provided nursing assessments & patient, family/ staff education. Recruited patients for national registries.
- Assisted with travel and equipment grants. Developed a standard operating procedure for TM clinic.

