TeleRheumatology in Practice

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NRTRC CONFERENCE

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

Objectives

Understand the unique challenges of using telemedicine to provide rheumatology care

Describe several different approaches for using synchronous or asynchronous telemedicine in rheumatology

Review the benefits of telemedicine in rheumatology, with a focus on rheumatoid arthritis

Common Concerns of Rheumatologists about use of Telemedicine

How can I do a joint exam?

Approaches to Joint Exam

Trained presenter

- Works well with one or a few outreach sites
- Mid-level provider often trained to conduct detailed joint exam

Visual inspection

- Swelling and deformity can be visualized to some extent
- Non-trained presenter can assist with range of motion testing
- Works well for hands but not as well for lower extremity joints

Approaches without Joint Exam

Technological tools to assess joints or overall functional status

- Thermal imaging
- Wearable mobile devices with patient-generated health data

Focus on other important components of follow-up

- Education
- Medication monitoring
- Disease monitoring (other than exam)
- More frequent follow-up than in-person only, even if there is not a joint exam at each visit

TeleRheumatology Systematic Review

Arthritis Care & Research
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ORIGINAL ARTICLE

Telerheumatology: A Systematic Review

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- Phases of Disease
- Which Diseases
- Communications Method
- Presenter
- Type of Study
- Any Cost Analysis?

TeleRheumatology: Studies in Systematic Review

	Studies	Patients	Total %
Overall	20	1426	100%
Date of publication			
2010-2015	8	730	51%
Prior to 2010	12	696	49%
Trial method			
Randomized controlled trial	1	46	3%
Observational	19	1380	97%
Cost analysis attempted	6	222	16%

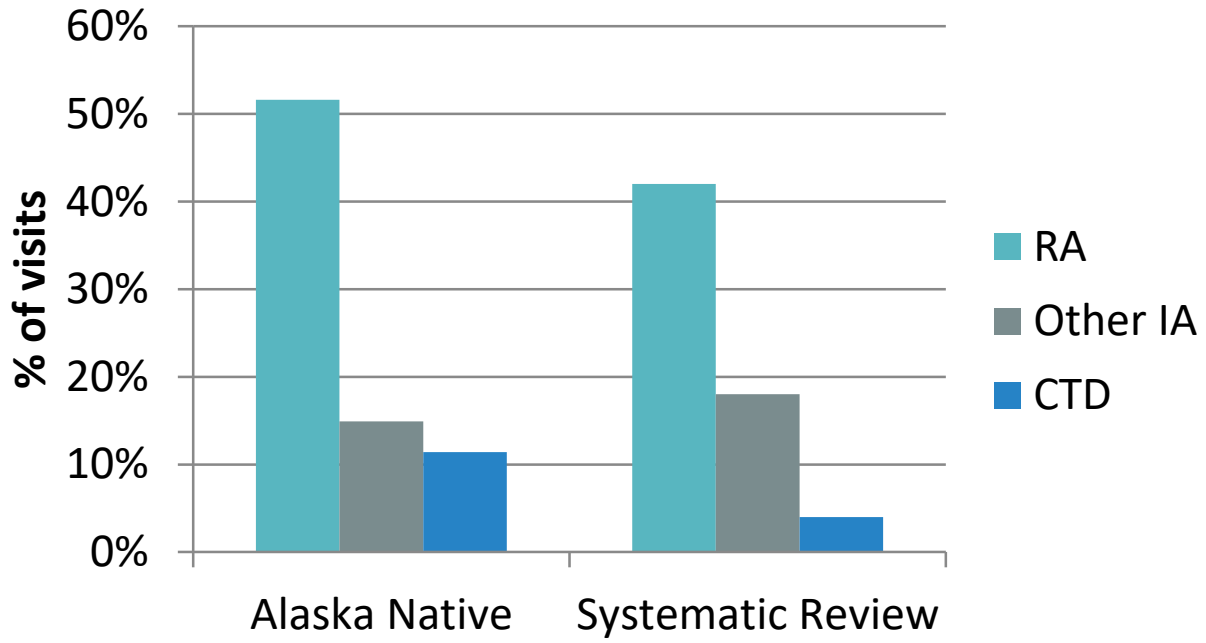
TeleRheumatology: Phases and Diseases

Phase of Care:

- Follow-up visits (60% of studies)
- Initial visits (34% of studies)

Diagnosis:

- Any diagnosis can be eligible unless:
  - In-person exam is critical for decision-making
  - Tests or treatments are needed now that cannot be delivered in the home community



TeleRheumatology Methods and Presenters

	Total % Patients
Communications Method	
VTC (12 studies)	34%
Asynchronous (3 studies)	15%
Telephone-based (6 studies)	44%
Smartphone (1 study)	10%
VTC presenter	
Physician	66%
RN, PT, med tech	21%
Not specified	13%

TeleRheumatology: Asynchronous Program Example

Department of Defense e-Consult program

Rheumatology data presented at ACR annual meeting in 2014

- Retrospective analysis of 193 e-Consults for rheumatology
- 98% answered within 24 hours with average of 5.3 hours
- Most common diagnoses were forms of inflammatory arthritis (48%)
- Rheumatologists provided input on diagnosis and management
- Dispositions changed for more than 1/3
- Only 25 of 193 were evacuated to a tertiary medical center

Pitfalls:

- Specialist exam is not possible
- Lab data are not specific

Schmidt TW, Lappan C, Battafarano DF. Arthritis Rheum; 2014;66:S44.

TeleRheumatology: Synchronous Program Examples

Prisons:

- Gundersen Health System (WI) presented at ACR annual meeting in 2018
- Records and labs faxed before the visit
- Vital signs taken by DOC but exam is done only with assistance of the patient
- May still need in-person visit

Rural veterans:

- Established diagnosis of inflammatory arthritis
- Synchronous telemedicine visits every 2-4 months without trained presenters, with in-person rheumatologist visit every 6-12 months
- Study* found patient-reported outcomes and satisfaction similar in telemedicine and usual care groups, with significant cost savings

*Wood PR, Caplan L. J Clin Rheumatol 2019;25:41

Rheumatology in the Alaska Tribal Health System

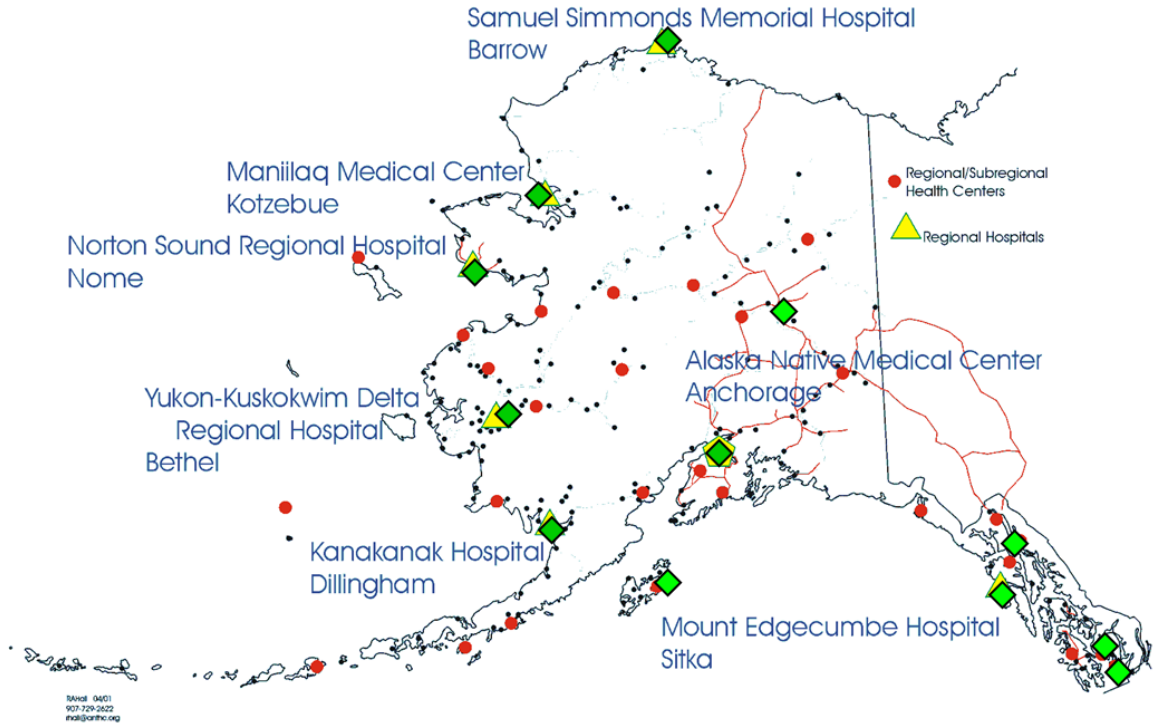
Alaska Tribal Health System

- Affiliation of regional tribal health organizations statewide

Specialty Care

- Hospital clinic (Anchorage)
- Field clinics
- Telemedicine

Rheumatology Field Clinic Sites



TeleRheumatology in the Alaska Tribal Health System

Phase of care: follow-up visits

Diseases: any disease, but rheumatoid arthritis is most common

Method of communication: synchronous video visits

Presenters: not trained in rheumatology or to do a joint exam

Other unique features:

- Integrate video visits in regular clinic day schedule
- Alternate with in-person visits at field clinic or hospital clinic
- Multiple remote clinic sites
- Emphasis on continuity (usual rheumatologist, usual site of primary care)
- Patient is in a remote clinic, not at home or on mobile device

Rheumatoid Arthritis (RA)

Autoimmune and chronic disease

More common in women

High prevalence/incidence in AI/AN populations

Inflammation of multiple joints, usually symmetric

Younger age of onset than osteoarthritis

Several complications of inadequately controlled disease:

- Joint damage and disability
- Early mortality

Management of Rheumatoid Arthritis

Permanent joint damage can occur early in RA

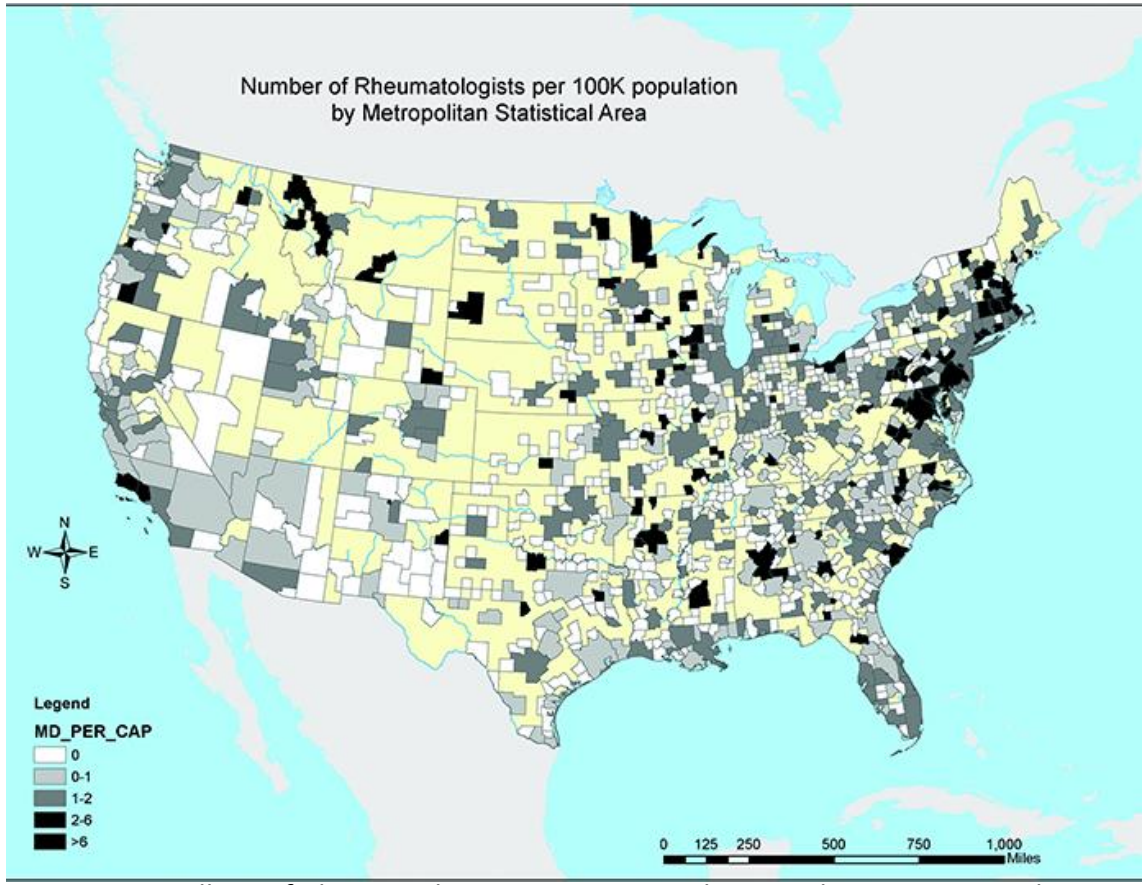
Early diagnosis and prompt treatment with DMARDs (disease-modifying anti-rheumatic drugs) improves outcomes:

- Improves quality of life and functional status
- Reduces likelihood of joint replacement
- Reduces risk of early mortality

Current guidelines recommend a “treat to target” strategy

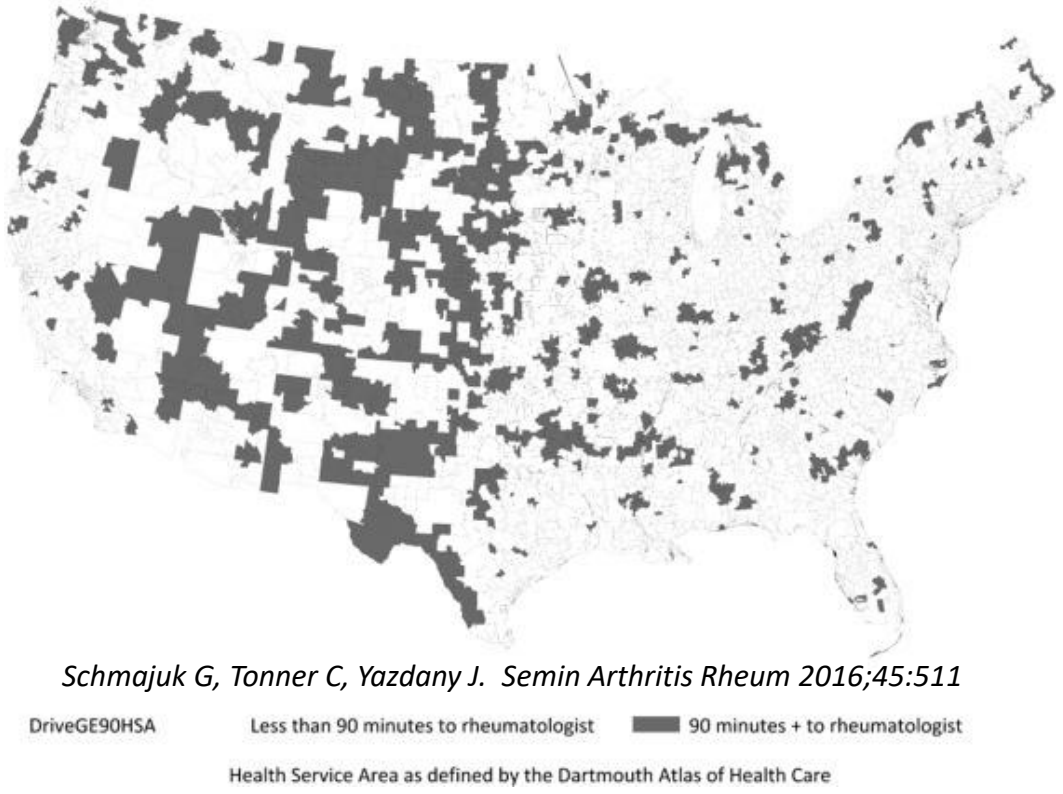
- Requires frequent assessment by a rheumatologist

Rural Patients and Rheumatologist Access



American College of Rheumatology Committee on Rheumatology Training and Workforce Issues. Arthritis Rheum 2013;65:3017–25.

US Health Service Areas with mean Medicare beneficiary travel time to a rheumatologist of >=90 min



Schmajuk G, Tonner C, Yazdany J. Semin Arthritis Rheum 2016;45:511

Study Design: Telemedicine in RA

Aims:

1. Impact of telemedicine on RA disease activity
2. Impact of telemedicine on access to care and quality of care for RA

Study Population:

- Diagnosis of RA by a rheumatologist seen for follow-up
- Telemedicine and in-person care both offered as part of usual care
- Disease activity, telemedicine perception survey, and quality measures at baseline and one year
- Recruited between 2016-2018 and followed until March 2019

Results: Factors Associated with Telemedicine Use in RA at Baseline

Characteristic	Telemedicine (n=56)	In-person only (n=66)	p-value
Age, year, mean (SD)	52.2 (12.2)	52.2 (13.9)	0.971
Female, n (%)	45 (80%)	57 (86%)	0.372
RA disease duration, years, mean (SD)	10.0 (8.8)	10.2 (10.9)	0.421
RAPID3 score (0-30 scale), mean (SD)	**12.63 (5.4)**	**10.43 (5.5)**	**0.037***
Number of rheumatology visits in past year, mean (SD)	**2.95 (1.35)**	**2.39 (1.32)**	**0.011***
Rheumatologist telemedicine rate, mean (SD)	**0.196 (0.064)**	**0.115 (0.094)**	**<0.001***
Telemedicine survey score (possible range -2 to +2), mean (SD)	**0.547 (0.625)**	**0.238 (0.597)**	**0.001***
Ever seen by telemedicine by another provider, n (%)	9 (16%)	4 (6%)	0.074

Not shown and not associated: autoantibodies, erosions, smoking, comorbidity index, DMARD prescribed, distance

Ferucci ED, et al. Arthritis Care Res 2019 doi:10/1002/acr.24049

Preliminary Results: Disease Activity and Quality of Care

Preliminary results presented in fall 2018 at American College of Rheumatology

- 81 participants followed from baseline to 6 months
- RAPID3 lower in in-person group at 6 months
  - This was also the case at baseline
- Change in RAPID3 and functional status from 0 to 6 months did not differ by group
- No difference in proportion in LDA/remission at 6 months by RAPID3
- Conclusions: no difference in short term outcomes using telemedicine vs. in-person only care

Final results (to 12 months) have been analyzed and manuscript is in progress

Conclusions: Telemedicine in RA

Telemedicine can be a useful adjunct in managing RA and other rheumatic diseases

Requirement for joint examination limits its utility for initial diagnosis in rheumatology

More likely to be used by patients who have more active disease and more favorable opinions of telemedicine

No clear difference in quality of care vs. in-person only visits in short term

Ability to see patients more often may improve long term disease outcomes

Future Study

Small sample size for studies of rheumatoid arthritis

New study focuses on broader set of chronic diseases

Pilot project using semi-structured interviews with patients and providers

- Benefits and barriers of telemedicine for chronic disease specialty care

Funded study started 4/1/2019 with the following aims:

1. Determine the **predictors** of receiving care by video telemedicine for chronic disease
2. Investigate the relationship between video telemedicine and **clinical outcomes** of chronic diseases
3. Perform a **cost comparison** of video telemedicine and in-person visits for chronic disease specialty care

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